

BEYOND MONEY:

Intrinsic work motivation in profit and nonprofit organizations

BY

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ABSTRACT

The purpose of this study is threefold. Firstly, the antecedents of intrinsic work motivation are investigated. The role of job autonomy, relatedness at work, perceived competence and the individual difference of autonomy orientation on intrinsic motivation were explored. Secondly, the purpose of this research is to investigate the link between intrinsic work motivation and the outcome variables performance and turnover intention. Thirdly, the extent to which the two previous objectives are contingent upon type of organizations is examined. The proposed hypotheses are based on Self-Determination Theory, the Job Characteristics Theory as well as a qualitative pilot study.

The present study contributes to previous work on intrinsic motivation by contrasting one profit and one nonprofit organization that differ in terms of external (monetary) motivators. Moreover, contribution to the knowledge base on intrinsic motivation in organizations is made by responding to calls for research on social factors influencing motivation and by proposing alternative hypotheses regarding the role of individual differences.

The hypotheses and the model were empirically tested on a sample of 261 respondents from one profit and one nonprofit organization within the health sector in Norway. The results showed that job autonomy, relatedness at work and the individual difference of autonomy orientation were positively associated with intrinsic motivation. The alternative hypothesis of autonomy orientation as a moderator variable was not supported. The link between the three antecedents and intrinsic motivation were mediated by perceived competence. A positive relation between intrinsic motivation and performance and a negative association between intrinsic motivation and turnover intention were found. No differences in intrinsic motivation in the two organizations were found. Invariance analyses in structural equation modeling showed that there were no differences in path coefficients between the profit and nonprofit organization. Theoretical and practical implications are derived from this study, and directions for future research are provided.

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ABBREVIATIONS

ASA	Attraction Selection Attrition
BPNT	Basic Psychological Needs Theory
CET	Cognitive Evaluation Theory
CFI	Comparative Fit Index
COT	Causality Orientation Theory
GNS	Growth Need Strength
IFI	Incremental Fit Index
JCM	Job Characteristics Model
JCT	Job Characteristics Theory
MCAR	Missing Completely at Random
MPS	Motivating Potential Score
NNFI	Non-Normed Fit Index
SD	Standard Deviation
SDT	Self-Determination Theory
SEM	Structural Equation Modeling
OIT	Organismic Integration Theory
RMSEA	Root Mean Square Error of Approximation

PART I

“Of course people work to make money: It’s necessary but not sufficient.”

(Florida, 2002, p. 87)

1. INTRODUCTION

1.1 Background

How can it be explained that two employees with the same type of position, same education and similar wage perform differently? Motivation is one of the main topics that both organizational researchers and practicing managers look at in order to understand behavior in organizations. Motivation is valued by organizations due to its consequences; motivation produces. Managers therefore often ask which factors may influence and increase employee motivation. The questions are important, yet they lack clear and simple answers.

Two contradictory statements and views regarding attitudes toward pay are: “Pay is the most important single motivator in our organized society” and “Wage systems are not in themselves an important determinant of pace work, application to work, or output” (Porter & Lawler, 1968, p. 56). The starting point in this study is placed in between these two contradictory statements, along with Florida (2002) arguing that: 1) employees want to make sufficient money in order to live in a way they prefer. Also, 2) being paid what they are worth, for example by how much they think they work or by what their colleagues are paid, is of importance. Still, 3) money alone will not make most workers motivated or committed (ibid). Money may play much less of a role at work than we normally think. A survey among 20.000 information-technology (IT) workers reveals that money is an important but insufficient motivator. On the question of, “What matters most to you about your job,” nearly twice as many selected “challenge of job/responsibility” as a key factor rather than the pay (Florida, 2002, ch. 5). The workplace is regarded as an arena where individuals can develop and express themselves (Brytting & Trollestad, 2000). Therefore, simple rules or guidelines such as higher pay for harder work or higher position in the organizational hierarchy may not be looked upon as a primary or main motivator. Firms and businesses tend to overrate money as a motivating factor (Florida, 2002). It is also argued that individual monetary rewards may be difficult to apply since they are regarded as neither effective nor reliable in terms of evoking

high motivation for the accomplishment of organizational objectives (Katz & Kahn, 1966). It is also claimed that economic incentives may undermine important aspects of employee motivation (Deci, Koestner, & Ryan, 1999a).

Based on the arguments above, this study goes beyond the study of money as a motivator. In this research, *intrinsic motivation* at work is the topic of interest, and other dimensions of people at work such as psychological needs are considered. Intrinsic motivation refers to engaging in an activity for the pleasure and satisfaction inherent in the activity (Deci & Ryan, 1985a). On the other hand, extrinsic motivation refers to performing an activity in order to achieve something external to the activity. An intrinsically motivated employee acts for the interest, the fun or the challenge of the activity rather than because of external rewards or pressure. Although the link between motivation and performance is not frequently studied, individuals whose motivation is intrinsic rather than extrinsic reveal that the former relative to the latter has more interest and excitement, which are also manifested as enhanced performance (Ryan & Deci, 2000a). Hence, factors that maintain or increase intrinsic motivation are regarded important by the researcher of this study both from an employee perspective as well as from an organizational perspective where production and performance are of great concern.

1.2 Research questions

The purpose of this study is threefold. Firstly, the objective is to investigate the antecedents of intrinsic work motivation. A large number of theories address the issue, and different explanations are given, see Ambrose and Kulik (1999) for an overview. The importance of examining motivation at both the trait level and a more specific level simultaneously is emphasized in the literature (Deci, 1980; Vallerand, 1997a). This study therefore investigates the role of job factors, social factors and individual factors on intrinsic work motivation.

Secondly, the purpose of this study is to investigate possible outcomes of intrinsic work motivation. More specifically, this study investigates the motivation-performance relationship, considering the association between intrinsic work motivation and performance. The second outcome variable of interest in this study is turnover intention. Work turnover represents an important issue for many organizations in the way that the costs related to time invested in hiring and training employees that then leave the organization is sought to be

minimized. Work turnover is given scientific attention in this research where the link between intrinsic motivation and turnover intention is investigated.

Thirdly, the extent to which the previous two issues are contingent upon type of organization is investigated. Whether employees' intrinsic motivation differs in the profit and nonprofit sectors is investigated by conducting a comparative study of one profit and one nonprofit organization.

The threefold objective of this study is outlined in three empirical research questions.

Research question 1: How are job factors, individual factors and social factors related to intrinsic work motivation?

Research question 2: How is intrinsic motivation related to performance and turnover intention?

Research question 3: Are findings from research questions 1 and 2 contingent upon type of organization?

In order to answer the research questions, this study is based on Self-Determination Theory (Deci & Ryan, 1985a; Ryan & Deci, 2000a) and Job Characteristics Theory (Hackman & Oldham, 1976, 1980) as well as a qualitative pilot study. Among important job factors, job autonomy has been chosen to be the studied variable in this study. Likewise, relatedness at work was the chosen social factor in this study. Individual factor in this study is represented by the individual difference variable autonomous causality orientation. In addition, perceived competence is included as an important factor influencing intrinsic motivation. The importance of specifying more than one form of relationship between variables is emphasized in this study. Following Platt's (1964) strategy of hypotheses testing procedure, competing alternative hypotheses are proposed and tested in this research.

1.2.1 Scope of present research

Following from the research questions and the arguments above, intrinsic motivation is the focus in this study. Extrinsic motivation is therefore only commented upon regarding research question three in order to confirm the underlying assumptions of differences between profit

and nonprofit organizations with respect to external motivators. Moreover, the discussion of motivation-related concepts such as organizational commitment (Meyer, 1997), job satisfaction (Judge, Parker, Colbert, Heller, & Ilies, 2001) and creativity (Amabile, 1996; Kaufmann, 2006; Runco, 2004) are beyond the scope of this research. From the research questions, it follows that the level of analyses is primarily at an individual level. This implies that analyses at an organizational level have not been given specific attention in this study.

1.3 Contribution of present study

Work motivation is a frequently researched topic that has received much attention over the past several decades in both research journals as well as management periodicals (Steers, Mowday, & Shapiro, 2004). Numerous empirical motivational studies are conducted in organizations (Ambrose & Kulik, 1999). Why has another empirical motivational study been proposed? What is new or different in this research? Although a variety of motivational theories as well as empirical studies exist, Locke and Latham (2004) argue that further improvements of existing motivation theories are necessary: “Nevertheless, our knowledge of the subject of work motivation is far from complete” (p. 389). Six major areas of contribution from this study can be seen.

Firstly, despite the strong empirical foundation of Self-Determination Theory (SDT), only around a dozen studies have tested the theory within organizational settings (see Table 3). Further, only a few of these studies included an individual difference variable (Baard, Deci, & Ryan, 2004; Leone, 1995). This research therefore contributes to the knowledge base of Self-Determination Theory since the study is conducted in an organization and since an individual difference variable is included in the study.

Secondly, there is a dearth of research examining the importance of social factors on motivation (Parker & Wall, 2001). Job complexity measures such as skill variety and autonomy are well established, it is argued that more work is needed with respect to the social environment (Morgeson & Campion, 2003). This study includes the social factor ‘relatedness at work’ in order to investigate the link between relatedness and intrinsic work motivation.

Thirdly, the individual-level moderators that have been most recognized in work design theory (i.e. Job Characteristics Theory) are growth need strength (GNS) (Fried & Ferris,

1987). Much research effort has gone into examining the moderating role of GNS. The inconclusiveness of investigations into GNS has encouraged the search for other individual differences that moderate employee response to job characteristics (Parker, Wall, & Cordery, 2001; Wall & Martin, 1987). There is a call to investigate a wider range of moderators of the work design-outcomes relationship (Morgeson & Campion, 2003, p. 446). This study assesses the role of autonomy orientation as a moderator between job autonomy and intrinsic work motivation. In doing so, this research expands on the existing work design moderators. In addition, an alternative hypothesis to Self-Determination Theory (SDT) is proposed, since SDT claims that autonomy orientation accounts for independent variance in intrinsic work motivation (Gagné & Deci, 2005).

Fourthly, there is a call for research that empirically examines how employee motivation influences task performance. There is a concern that research areas measure either motivation or outcome variables such as performance without studying the link between them (Ambrose & Kulik, 1999, p. 279). As the literature review in this study and Table 3 reveal, only a few studies have investigated the intrinsic motivation – performance link. This study therefore helps to increase existing knowledge by addressing the relationship between intrinsic work motivation and performance.

Fifthly, much research has focused on turnover behavior at work. For instance, the role of job satisfaction in predicting work turnover is confirmed (Griffin & Bateman, 1986). However, few motivational studies have included turnover as an outcome variable. To the best of my knowledge, only two previous SDT-studies have investigated the association between work motivation and turnover (Kuvaas, 2005; Richer, Blanchard, & Vallerand, 2002). Therefore, the current research expands on the previous motivational studies by investigating the link between intrinsic work motivation and turnover intention.

Motivational research in the nonprofit sector is limited in both the motivational literature as well as the nonprofit literature: “There is little recent motivation research on the non-profit sector” (Schepers et al., 2005, p. 203). The dearth of research that empirically examines employee motivation in nonprofit organizations, indicates the sixth contribution of this study. In addition, since this research investigates motivation within the health sector, Edgar’s (1999) statement is of importance: “There is a sparsity of nursing literature specifically

directed to motivation” (p.15). In addition, contrasting profit and nonprofit organizations may offer an opportunity to critically examine the relationship between the studied variables.

1.4 Outline of the dissertation

The dissertation is organized as follows: In part II, theoretical perspectives are presented. The theoretical part is divided into five chapters. Chapter 2 gives a literature review of studies that are conducted within SDT and JCT. Chapter 3 discusses the role of job factors, individual factors and social factors, which are related to research question one. How the outcome variables are related to intrinsic work motivation, which is related to research question two, is presented in Chapter 4. Chapter 5 is related to research question three: possible differences in profit and nonprofit organizations are presented. Chapter 6 summarizes the theoretical part and the hypotheses. Part III concerns the methodological approach of the research (Chapter 7). Part IV presents the results (Chapter 8). Part V discusses the results of the empirical research and present potential explanations for the findings (Chapter 9). Finally, limitations and implications are presented.

PART II

This part describes the theoretical perspectives of the research. In Chapter 2, perspectives and clarifications of intrinsic work motivation are given. This includes an overview of the main theoretical framework and its underlying assumptions. Theoretical underpinnings related to the first research question are given in Chapter 3: Antecedents of intrinsic work motivation. Chapter 4 discusses the link between intrinsic motivation and the outcome variables which are related to the second research question. Chapter 5 stems from the third research question concerning intrinsic motivation in profit and nonprofit organizations. Chapter 6 gives a summary of part II where the hypotheses with their respective models are proposed. Known and unknown knowledge related to the specific issues are given along the presentation of part II.

2. INTRINSIC WORK MOTIVATION

Perspectives and clarifications of the concept of intrinsic work motivation are presented in 2.1. An overview of Self-Determination Theory and its underlying assumptions are given in Chapter 2.2. Chapter 2.3 presents the main issues in the Job Characteristics Theory. Chapter 2.4 introduces the qualitative pilot study that together with theory are the bases for the proposed hypotheses.

2.1 The concept of motivation

What is motivation? Where does it come from, how is it sustained and what does it lead to? The term motivation derives from the Latin word for movement (*movere*). Motivation means to *be moved* to do something. Thus, the study of motivation explores the energization and direction of behavior. Motivation varies across as well as within individuals at any given time. A person who feels no inspiration to act is characterized as unmotivated.

2.1.1 *Work motivation*

The concept of *work* motivation deals with motivation in a work context. Work motivation stems from the “energy” to make an effort in relation to work. People at work can be more or less motivated to do their tasks. However, people do not share only different amounts, but also different kinds of motivation. That means, people vary not only in level of motivation, but also in the orientation of the motivation (Ryan & Deci, 2000b). Orientation of motivation

concerns the underlying attitudes or goals of why a behavior occurs. As an example, an employee can be highly motivated to do his or her work out of interest or, alternatively, because he or she wants to procure the approval of somebody else, e.g., the manager. In this example, the amount of motivation does not necessarily vary, but the nature and focus of the motivation does.

Pinder (1998) describes work motivation as “a set of energetic forces that originate both within as well as beyond an individual’s being, to initiate work-related behavior, and to determine its form, direction, intensity and duration” (p. 11). The definition is broad and recognizes the influence of both environmental forces (e.g., organizational reward systems) and forces inherent in the person (e.g., individual needs and motives) on work-related behavior. The definition focuses on the initiation, direction and intensity of human behavior over time. Initiation can be explained by a discrepancy between a need or desire of an object or state and an unfulfilled state or a state below expectation (Mitchell & Daniels, 2003). Regarding the directional component, goals may be seen as providing direction. There is also an intensity dimension. Some needs or desires can be more important than others. In addition, there is a division of internal and external forces. The notion of duration implies that persistence in goals may be a possible outcome of behavior on the job (Pinder, 1998). One group of motivational theories emphasizes explanations mainly by the individual him/herself (internal explanations). An example is need theories. Other motivational theories emphasize forces outside the individual (external explanations). Equity-theories are examples that mainly belong to the latter category.

2.1.2 Intrinsic and extrinsic motivation

The distinction between intrinsic and extrinsic types of motivation is well-known in the motivation literature. Intrinsic motivation refers to doing something because it is inherently interesting or enjoyable and extrinsic motivation refers to doing something in order to obtain a separable outcome (Ryan & Deci, 2000b). Self-Determination Theory (SDT) (Deci & Ryan, 1985a; Ryan & Deci, 2000a) not only distinguishes between intrinsic and extrinsic motivations, it also specifies four different types of extrinsic motivations along a continuum of internalization that describes the degree to which behavior will be regulated in relatively controlled versus autonomous or self-determined ways. The more a regulation has been internalized, the more it represents integration and therefore provides the basis for volitional and self-determined behavior. Internalization means that people “take in” a value or

regulation and integration refers to the further transformation of that regulation into their own. The four types of extrinsic regulations are *external*, *introjected*, *identified* and *integrated* regulation (Ryan & Deci, 2000a). Although this study focuses on intrinsic motivation, the four types of extrinsic motivation are briefly outlined in the following. The reason for this is that the definition of intrinsic motivation may become clearer and more specific when showing what is not included in the definition as well as what is included.

The lowest level of internalization is *external regulation* which refers to doing an activity to get rewards or to avoid punishments. This regulation is completely externally controlled. *Introjected regulation* is controlled by demands inside the person such as self-worth contingencies. This involves taking in a regulation, but not accepting it as one's own. It is an internal pressure to act in a certain way. Ego involvement is a classic form of introjection (deCharms, 1968). People are then motivated to demonstrate ability or avoid failure, these give ego-involved feelings such as pride and guilt. *Identified regulation* refers to behaviors in which the individual identifies with values of the activity. This means, the action is accepted and looked upon as personally important. Behavior regulated this way is experienced as being endorsed. However, the regulation of the activity is not necessarily congruent with other interests of that person. Therefore, a final level of extrinsic motivation referred to as integrated regulation is described. *Integrated regulation* denotes behavior where actions are fully assimilated to the self, and thus making one's identifications with the regulation congruent and harmonious with other identifications and other aspects of the self. Integrated regulation represents the highest level of internalization.

Intrinsic motivation reflects the highest degree of self-determination. Integrated regulation differs from intrinsic motivation in that in the former, the activity is done because of the meaning it holds for the self. In contrast, when intrinsically motivated, the activity itself is interesting and enjoyable. Therefore, integrated regulation is still extrinsic and not intrinsic motivation.

2.1.3 *Autonomous versus controlled motivation*

Central notions in SDT are the terms autonomous motivation and controlled motivation. Autonomy involves experiencing choice and acting with a sense of volition (Deci and Ryan, 1985a). The opposite of autonomous motivation is controlled motivation which refers to doing an activity under obligation in order to obtain something outside the activity. The

different types of motivation lie along a continuum of relative autonomy. External motivation is the most controlled form of motivation and the least autonomous. Introjection is also a controlled form of regulation in which behaviors are performed to attain pride or avoid guilt. A more autonomous or self-determined form is the identified regulation. The most autonomous form of extrinsic motivation is regulation through integration. Intrinsic motivation is also autonomously regulated. To sum up, external and introjected regulation are controlled forms of motivation and identified, integrated and intrinsic motivation are autonomous forms of motivation.

Another concept that is referred to in the literature is the term *internal motivation* (Hackman & Oldham, 1976). In addition, terminology such as “internal and external origins” are used (Pinder, 1998, p.12). Within the described framework, introjected, identified, integrated and intrinsic regulation are all regarded as internal forms of motivation. Introjection is looked upon as internal because it involves ‘taking in’ a regulation. Although it is not accepted as one’s own action and is not part of the integrated self, it is an internal pressure to act in a certain way, and hence represents internal and not external motivation. Still, introjected regulation is one type of extrinsic regulation as the activity itself is not enjoyable. Additionally, introjected regulation represents a controlled form of motivation in addition to an internal and extrinsic type of motivation.

Table 1. Types of motivation with their respective regulatory styles.

Type of motivation	Extrinsic Motivation				Intrinsic
Type of regulation	External	Introjected	Identified	Integrated	Intrinsic
Internal vs. external regulation	External	Internal	Internal	Internal	Internal
Motivation on continuum of relative autonomy	Controlled	Controlled	Autonomous	Autonomous	Autonomous

Table 1 clarifies and gives an overview of the above discussion with respect to the terminology intrinsic, extrinsic, external, internal, introjected, identified, integrated, controlled and autonomous motivation.

In addition to the previous concepts, the term amotivation refers to the state of lacking the intention to act (Ryan & Deci, 2000a). When people are amotivated, they either do not act at all or act without intent. Amotivated behavior is action that is not considered enjoyable (intrinsic) or is not expected to yield a desired outcome (extrinsic).

2.1.4 Focus in this study

The research focus in this study is at the individual level, focusing on factors influencing intrinsic motivation in a work context: *intrinsic work motivation*. This type of autonomous motivation is restricted and limited to people doing an activity because the activity itself is interesting or enjoyable. A question of significance is whether the intrinsic type of motivation is present and relevant in a work context. Do employees find their tasks enjoyable? Do people work because the activity is fun? Or is it according to the definition of intrinsic motivation that only ‘children playing in the garden’ are activities purely intrinsically motivated? The latter is regarded as the ultimate form of intrinsic motivation. Other activities can be more or less intrinsically motivated. Activities like singing, dancing, making handcraft, doing sport and so on may be intrinsically or extrinsically motivated, depending on whether the activity is done because it is fun or depending on the extent the activity is done in order to attain certain outcomes. In the same way, activities at work may be more or less intrinsically or extrinsically oriented. The quality of experience and performance can be different when one is behaving for intrinsic versus extrinsic reasons (Ryan & Deci, 2000a). The reason why intrinsic motivation has been chosen as a focus in this study is that intrinsic motivation is associated with more positive outcomes than extrinsic motivation (ibid). Hence, what facilitates intrinsic motivation is of interest in this study.

2.2 Self-Determination Theory – an overview.

In the literature, there are a number of theories that provide different conceptualizations of the factors that govern motivation. Examples are need theories (Maslow, 1954; McClelland, 1987), equity or social comparison theory (Adams, 1965), expectancy theory (Vroom, 1964), goal-setting theory (Locke & Latham, 1990), Job Characteristics Theory (Hackman & Oldham, 1976, 1980) and Self-Determination Theory (Deci & Ryan, 1985a; Ryan & Deci, 2000a). The latter two are looked upon as useful theoretical frameworks in this study. The Self-Determination Theory which examines conditions that elicit and sustain versus subdue and diminish intrinsic motivation is presented in the following. Thereafter, Job Characteristics Theory is presented in Chapter 2.3.

Motivation theories are built on a set of assumptions about the nature of human beings. Self-Determination Theory (SDT) theory is an organismic motivational theory within the tradition of empirical psychology. An organismic theory assumes that organisms are innately active,

volitional and initiate behaviors. In contrast, mechanistic theories tend to view organisms as passive that are propelled around by physiological drives and environmental stimuli.

2.2.1 *Cognitive Evaluation Theory*

Self-Determination Theory started with experimental studies of effects of environmental factors on intrinsic motivation, factors that facilitate versus undermine intrinsic motivation. On the basis of hypotheses and data from the Deci (1971) study and several that followed, Deci and Ryan (1985a) made a formal statement of Cognitive Evaluation Theory (CET), presented as a sub-theory within SDT. Despite the name *Cognitive Evaluation Theory*, CET and SDT are regarded more as a need theory than as a cognitive theory. CET asserts that underlying intrinsic motivation is the psychological *need* for autonomy and competence. CET claims that external rewards can undermine self-determination and intrinsic motivation to the extent that they are experienced as controlling. The issue of reward effects on intrinsic motivation has been debated in the literature (Deci et al., 1999a; Deci, Koestner, & Ryan, 1999b; Eisenberger, Pierce, & Cameron, 1999). Most research on effects of environmental events on intrinsic motivation has focused on the issue of autonomy versus control, rather than the issue of competence. In addition to *Cognitive Evaluation Theory*, other sub-theories within SDT are *Organismic Integration Theory* (OIT), *Basic Psychological Needs Theory* (BPNT) and *Causality Orientation Theory* (COT). Although BPNT and COT are the most important sub-theories in this research, all four mini-theories are presented shortly as they are all linked together.

2.2.2 *Organismic Integration Theory*

Organismic Integration Theory assumes that internalization is an active and natural process in which people attempt to transform social requests into personally endorsed values and self-regulation. It means that individuals assimilate and reconstitute formerly external regulations in order to be self-determined while enacting them (Deci & Ryan, 1985a). In doing so, they become more integrated. When the process of internalization is successful, external regulation is internalized through the process of introjection, identification and integration (see definitions Section 2.1.2). Internalization does not happen automatically. Internalization, like other processes such as intrinsic motivation, requires nourishment to function effectively. The degree to which individuals are able to internalize regulations, values and demands and incorporate them into their self is dependent upon to what degree the basic psychological needs are supported.

2.2.3 *Basic Psychological Needs Theory*

The Theory of Basic Psychological Needs assumes that there are three psychological needs that are universal and fundamental, and that satisfaction of these needs is necessary for psychological health and optimal development (Ryan & Deci, 2000a). The needs are competence, autonomy and relatedness.

The needs are specified as nutriments that are essential for healthy development. Failure to satisfy the basic needs leads to poorer well-being. In contrast to theories that consider needs to be learned as a function of socializing process (e.g., McClelland, 1987), needs in SDT are considered to be innate. The concept of strength of the needs is therefore not regarded central in SDT. The focus is rather to what degree the needs are being satisfied, the theory therefore focuses on the interplay between an individual's basic needs and the social environment that either supports or thwarts the need satisfaction. The theory agrees that there may be variation in the expressed strength of a person's desire for needs (e.g., autonomy or relatedness), however, the differences are viewed as a result of the person's adaptation to not having their need satisfied in the past. In addition, the basic psychological needs theory argues that when people get fundamental needs thwarted, need substitutes may be developed. An example could be pursuing extrinsic rather than intrinsic goals (Deci & Ryan, 2000). Need satisfaction predicts a range of positive outcomes, such as intrinsic motivation, psychological health and well-being. Basic Psychological Needs Theory is a central sub-theory within SDT that is closely linked to the other mini-theories within SDT.

2.2.4 *Causality Orientation Theory*

The last mini-theory within SDT assesses individual differences in the orientation toward initiation and regulation of behavior, referred to as general causality orientation (Deci & Ryan, 1985a). Individual differences in general causality orientations are assumed to develop as a function of need satisfaction that people experience over time. These differences represent differences in motivational orientation at the global level of personality. *Causality Orientation Theory (COT)* argues that people are oriented to some extent to interpret events as autonomous (or informational), as controlling and as impersonal (or amotivating). These orientations are referred to as causality orientations and are assumed relatively stable. It is posited that everyone is to some extent autonomously oriented, to some extent control oriented and to some extent impersonally oriented. It is assumed that it is possible to measure the strength of each orientation within a person and that the strength of these orientations

predict psychological and behavioral variables. Thus, causality orientation theory does not represent a *categorical* view of personality where people are viewed as being a particular type. Rather, a *dimensional* view is presented, in which people are described along two or more dimensions.

Autonomy orientation is the chosen individual difference variable in this study. Autonomy orientation reflects a general tendency to experience the social environment as autonomy supportive. Autonomy oriented people regulate their behavior on the basis of interests and self-endorsed values. Central to the autonomy orientation is the experience of choice. When people are autonomy oriented, available information is used to make choices. Choice as a motivational concept is not synonymous with decision as in a cognitive perspective. From a cognitive perspective, the concept of choice refers to someone who decides to do something, for example a specific activity. From a motivational perspective, the concept of choice “applies only when the person experiences a sense of freedom or choice with respect to the action” (Deci & Ryan, 1985a , p. 155). Hence, behaviors that are truly chosen are central in SDT. Truly chosen behaviors exist if the person could seriously consider not doing them.

Behaviorally, autonomy oriented employees may tend to seek out opportunities to be autonomous by selecting a job that allows them for autonomy, for example. Autonomy oriented employees interpret environments as informational rather than controlling, and information is used to make choices. The control orientation involves orienting toward directives, based on a concern with controls. The control orientation involves a general tendency to experience social contexts as controlling and to be controlled. A person is to a large extent determined by controls in the environment or by internally controlling imperatives such as have to, ought to, must and should. Impersonal orientation refers to the general tendency to be amotivated. As the latter two causality orientations are not given attention in the research, they are not thoroughly described.

Locus of causality and locus of control

Deci (1980) introduced the concept of causality orientations. Following the terminology by deCharms (1968), autonomy orientation and control orientation reflect internal and external perceived locus of causality. Autonomy orientation, which involves regulating their behavior on the basis of own interest represents an internal perceived locus of causality. The control orientation describing the tendency for behavior to be regulated external to one’s integrated

self (i.e., introjected regulations) represents an external locus of causality. The impersonal orientation has a theoretical relationship with external locus of control although the locus of control (Rotter, 1966) is not the same as locus of causality (deCharms, 1968). Research on locus of control is developed out of a social learning perspective in which behaviors are believed to be controlled by expectancies about reinforcements.

Rotter distinguished between the internal and external locus of control, based on people's belief about the relationship between behavior and outcomes. External locus of control refers to a belief that outcomes are independent of behavior, that is, outcomes are delivered by luck or the unpredictable. The control of reinforcement is external, and hence related to impersonal orientation. Internal locus of control refers to a belief that outcomes are dependent upon behavior, that is, the belief that if I behave in a certain way, I will be able to attain a certain outcome. Internal locus of control is not directly related to one of the three causality orientations. Internal locus of control focuses on reinforcement. On the other hand, locus of causality (internal or external) is related to source of initiation and regulation of behavior and not to the outcome of the behavior. Locus of causality then focuses on why a behavior occurs and locus of control is concerned with what controls a person's outcome.

Table 2 gives an overview of the four mini-theories within SDT. Although they are dependent upon each other, each sub-theory has its specific focus. In this study, BPNT and COT are used as the basis for the choice of variables. In addition, the theory explains the specific relations among the variables, discussed in Chapters 3 and 4.

Table 2. Minitheories within Self-Determination Theory (SDT).

Subtheory	Area to be explained	Proposition
Cognitive Evaluation Theory (CET)	Effects of environmental events on intrinsic motivation.	External rewards can undermine people's intrinsic motivation, depending on the extent that they are experienced as controlling.
Organismic Integration Theory (OIT)	Necessary conditions for the internalization process.	The ongoing process of continual integration of internal and external stimuli is dependent upon to what degree the basic psychological needs are supported.
Basic Psychological Needs Theory (BPNT)	Needs as essential nutriment for development and psychological health.	Basic needs for competence, autonomy and relatedness must be satisfied in order to experience intrinsic motivation and well-being.
Causality Orientation Theory (COT)	The role of individual differences in people's generalized tendencies to be autonomous, controlled and impersonal.	Individual differences in causality orientations predict differences in initiation and regulation of behavior.

2.2.5 *Self-Determination Theory in a work setting.*

Self-Determination Theory has provided a useful framework for understanding behavior in different domains, such as education (e.g. Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004a), sport (Vallerand & Losier, 1999) and relationships (Deci, La Guardia, Moller, Scheiner, & Ryan, 2006). In addition, Self-Determination Theory has been applied to specific health-related behaviors, including smoking behavior (Williams, Gagné, Ryan, & Deci, 2002) and weight loss (Williams, Grow, Freedman, Ryan, & Deci, 1996). Even though SDT is based on a strong empirical foundation and has been supported by laboratory experiments and field studies in other applied domains, especially within the field of education, relatively few studies have tested the theory within organizational settings. Table 3 presents an overview of SDT studies that have been conducted in organizations. The overview is given in historical order and contains author, year, type of study and main results. In addition, the overview shows whether an individual difference variable, performance variable and/or turnover variable is included in the previous studies. Since the present study includes all three aspects which few previous studies do, contribution to the knowledge base of Self-Determination Theory is shown.

Table 3. Self-Determination Theory studies in organizations.

Author(s) and Year	Type of study	Following variables included in the study?			Main results
		Individual differences	Performance	Turnover	
Deci, Connell and Ryan (1989)	Empirical	No	No	No	Positive relationship between managerial autonomy support and employee satisfaction.
Kasser, Davey and Ryan (1992)	Empirical	No	Yes	No	Positive association between needs satisfaction of competence, autonomy and relatedness and work outcomes.
Ilardi, Leone, Kasser and Ryan (1993)	Empirical	No	No	No	Competence, autonomy and relatedness at work were significantly related to work satisfaction and psychological well-being.
Leone (1995)	Empirical	Yes	Yes (Engagement)	No	Autonomy support and feedback are associated with psychological need satisfaction, which is positively related to work engagement and job satisfaction.
Gagne, Senécal and Koestner (1997)	Empirical	No	No	No	Dimensions of empowerment (autonomy, competence, meaningfulness and impact) mediate the relationship between job characteristics and intrinsic motivation at work.
Gagné, Koestner and Zuckerman (2000)	Empirical	No	No	No	Autonomy support through offering choices, providing a rationale for doing tasks and acknowledgement of feelings facilitate acceptance of organizational change.
Deci et al., (2001)	Empirical	No	Yes (Engagement)	No	Cross-cultural organization study confirming that managers' autonomy support is correlated with need satisfaction of employees, and need satisfaction at work leads to engagement and psychological well-being.
Richer, Blanchard and Vallerand (2002)	Empirical	No	No	Yes	Relatedness, competence and task characteristics positively affect self-determined motivation which in turn facilitates job satisfaction leading to reduced turnover.
Baard, Deci and Ryan (2004)	Empirical	Yes	Yes	No	General autonomous causality orientation and managers' autonomy support predicted need satisfaction and positive work outcomes.
Lynch, Plant and Ryan (2005)	Empirical	No	No	No	Satisfaction of psychological needs for autonomy, competence and relatedness is related to job satisfaction.
Gagné and Deci (2005)	Theoretical	Yes	Yes	No	Description of SDT as a theory of work motivation. Research agenda and a SDT model of work motivation are given.
Kuvaas (2005)	Empirical	No	Yes	Yes	Job autonomy and autonomy supportive management are related to intrinsic motivation which are positively associated with performance and negatively related to turnover intention.

One of the first explorations of self-determination in a work organization was a study conducted by Deci, Connell and Ryan (1989)¹. Much of the previous research on self-determination was done in laboratory settings. This applied intervention study of nearly 1000 employees and 23 managers of a major machine corporation in the U.S. focused on effects of autonomy supportive managers. By managerial autonomy support is meant that managers acknowledge their employees' perspectives, managers provide relevant information in a non-controlling way, and managers offer choice and encourage self-initiation rather than putting pressure on their employees to behave in a specific way. Positive associations between autonomy supportive managers and employee satisfaction at work were found. Kasser, Davey and Ryan (1992) studied work motivation among employees in a sheltered workshop. As part of psychosocial rehabilitation plan, the individuals were placed in a variety of jobs. The result of the study supports the idea that employees who experience more autonomy, relatedness and competence have greater work participation and performance. In other words, employee self-ratings of motivation accounted for significant amounts of variance in work outcomes.

Similar to the study by Kasser et al. (1992), the study by Ilardi, Leone, Kasser and Ryan (1993) also investigated the effect of employee and supervisor perceptions of the employee's autonomy, relatedness and competence in a shoe factory. The study reported a positive relationship between employee and supervisor ratings of intrinsic motivational factors and work satisfaction, psychological health and self-esteem. Leone (1995) found positive associations between autonomy support and need satisfaction and between feedback and need satisfaction. Need satisfaction was positively related to work engagement and job satisfaction. The engagement scale included both behavioral (performance related) aspects and emotional aspects of engagement on the job. The study did not support the hypothesis of a relation between the individual differences of causality orientation and need satisfaction for autonomy, competence and relatedness. Gagné, Senécal and Koestner (1997) did a survey study in a Canadian telephone company. Path analysis showed that job characteristics affected different aspects of empowerment (autonomy, competence, meaningfulness and impact), which in turn affected intrinsic motivation. Outcomes of intrinsic motivation were not investigated in this study. The longitudinal study by Gagné, Koestner and Zuckerman (2000) found that autonomy support, operationalized through offering choices, by providing a

¹ Some work related studies have confirmed aspects of SDT before 1989. An example is the study by Eden (1975) that supported CET aspects of SDT by reporting a negative relationship between perceptions of extrinsic rewards and intrinsic motivation among kibbutz workers.

rationale for doing tasks and by acknowledging the other's feelings, facilitated acceptance of organizational change.

The Deci et al. (2001) study investigated the importance of basic psychological need satisfaction at work across cultures. A positive relationship between managerial support and need satisfaction among employees were reported in both an individualistic (American) as well as a collectivist (former Eastern Block country: Bulgarian) culture. The need for competence, autonomy and relatedness in turn predicted work engagement and psychological well-being in terms of reduced anxiety and increased general self-esteem. As in Leone's (1995) study, work engagement was also in the Deci et al. (2001) study measured by including behavioral (performance-related) aspects as well as emotional aspects of engagement on the job.

The study by Richer, Blanchard and Vallerand (2002) was to my knowledge the first SDT-research that included turnover variables. Their motivational model of work turnover shows that relatedness, competence and task characteristics are positively related to self-determined motivation, which positively affects job satisfaction and negatively affects emotional exhaustion. Job satisfaction in turn was negatively related to turnover intentions and emotional exhaustion was positively related to turnover intentions. A direct relationship between self-determined motivation and turnover intention was not investigated. However, the correlation matrix in the study shows a negative zero-order correlation between the items of the two constructs.

The study conducted by Baard, Deci and Ryan (2004) reported positive association between autonomy orientation and need satisfaction and between perceived autonomy support and need satisfaction. In turn, need satisfaction was positively related to performance evaluations and psychological well-being. Lynch, Plant and Ryan (2005) reported a positive relationship between satisfaction of needs for autonomy, competence and relatedness and the outcome variables job satisfaction and well-being at work. The research was conducted among clinical staff in a psychiatric hospital.

Thereafter followed a theoretical SDT-paper by Gagné and Deci (2005). SDT as a theory of work motivation was described and a research agenda and a SDT model were presented. The model includes individual differences in causality orientation and the social environment as

independent variables, autonomous work motivation as the mediator variable and performance, psychological well-being, job satisfaction and organizational commitment as the outcome variables. Kuvaas (2005) reported that intrinsic motivation was positively related to job autonomy and managerial autonomy support. Intrinsic motivation was in turn positively associated with performance and negatively related to turnover intention. The study was conducted in 99 organizations with a total of 6862 respondents.

Table 3 shows all published SDT – studies conducted in a work setting that are known to the researcher of this study². Among the few SDT studies that exist within an organizational setting, only three studies included the individual difference autonomy orientation, and one of these studies was a theoretical study. Six of the studies included performance as an outcome variable, and two of the studies included a turnover-variable. Based on the few SDT studies that have been conducted in a work setting and based on even fewer studies that have included individual difference of autonomous causality orientation, a performance variable or a turnover variable, the argument is that this study, which includes all the three mentioned variables, is of interest to researchers as well as practicing managers.

2.3 Job Characteristics Theory – an overview.

Work design has attracted a great deal of research within the field of organizational psychology and behavior. The design of work has an impact on individual well-being as well as on organizations that try to attain outcomes such as efficiency and satisfaction (Morgeson & Campion, 2003). The majority of studies within work design have focused on the model developed by Hackman and Oldham (1976; 1980), which is called the Job Characteristics Model (JCM). The second theoretical framework that this study relies on is the JCM, which remains the most common approach to work design research today.

2.3.1 *Job dimensions*

JCM identifies specific job characteristics for enriched work settings which are associated with behavior such as performance and attitudes such as job satisfaction. The five ‘core job characteristics’ are skill variety, task identity, task significance, autonomy and feedback. By

² Some organizational CET (pay-for-performance) studies are not reported in this review (e.g., Deckop & Cirka, 2000; Kuvaas, 2006b; Shirom, Westman, & Melamed, 1999).

skill variety is meant the degree to which a job requires a variety of different activities, involving the use of a number of different skills. Task identity refers to completion of an entire task, which means doing a job from beginning to the end. Task significance means it has an impact on other people. Autonomy is the freedom to determine how to carry out the tasks. Feedback refers to individuals obtaining direct information about results and performance.

2.3.2 Critical psychological states

According to JCT, the five core job characteristics are specified as determinants of three ‘critical psychological states’. Skill variety, task identity and task significance together promote the psychological state of ‘experienced meaningfulness.’ Autonomy contributes to ‘experienced responsibility’ and feedback leads to the ‘knowledge of results.’ The five core characteristics can also be combined into a single variable called the motivating potential score (MPS). MPS represents the overall motivating potential of a job to influence an employee’s attitudes and behaviors at work. The way MPS is computed indicates that the model emphasizes autonomy and feedback over the other three job characteristics. A score close to zero on either job autonomy or feedback will reduce the overall MPS to near zero. A score close to zero on one of the three job characteristics that contribute to experienced meaningfulness will not lead to an overall MPS close to zero.

2.3.3 Outcome variables

The three critical psychological states are posited to mediate the relationship between the five core job dimensions and the proposed behavior and work attitudes. More specifically, the psychological states promote work satisfaction, internal work motivation, performance and reduced absence and employee turnover. All of these outcomes are expected to be more positive for jobs with high MPS than for jobs with low MPS. Causal priorities among the mentioned outcome variables are not addressed in the model. Internal motivation is referred to as a state where feelings are “closely tied to how well he or she performs on the job” (Hackman & Oldham, 1980, p. 71). It is the three psychological states that are hypothesized to affect internal work motivation.

2.3.4 Growth need strength

Growth need strength (GNS) is an individual’s desire for learning, challenges and development (Hackman & Oldham, 1976). It is hypothesized that GNS is a moderator within

JCM. The basic assumption is that employees who have high need for personal growth and development will respond more positively to enriched jobs than people with low growth need strength. More specifically, GNS is predicted to moderate both the relationship between the core job dimensions and the psychological states and the relationships between the psychological states and the outcome variables. GNS is the most commonly examined moderator within JCM. The two other moderators in JCM (individual knowledge and skill and context satisfaction) have been much less frequently studied.

2.3.5 Summary of previous JCM studies

This section is based on previous literature reviews and metaanalyses within work design theories. More than 200 empirical studies inspired by JCM have been conducted on job characteristics and behavioral outcomes for more than two decades (Ambrose & Kulik, 1999). Based on the previous JCM research, Parker et al. (2001) arrived at two main conclusions. First, the effects of the core job characteristics on affective responses (satisfaction and motivation) have been largely supported, but those for behavior (i.e. work performance, turnover and absence) have been less consistently supported. Second, some particular features of the model remain untested. That is the specified links between the job characteristics and the critical psychological states have not been confirmed. In addition, Morgeson and Campion (2003) argue that a more diverse set of job characteristics need to be investigated. Job measures such as skill variety and autonomy are well established. They argue that more work is needed with respect to the social environment. A good deal of research has been done into examining the moderating role of GNS that has not yielded much support. It is argued that a wider range of moderators on important individual differences in the link between job design and outcomes should be investigated (Morgeson & Campion, 2003; Parker et al., 2001; Wall & Martin, 1987).

2.3.6 Comparison of JCT and SDT

Are the two presented theories complementary or competing? What are the differences and similarities between SDT and JCT? In the following, the two theories are compared with respect to similarities and differences. Possible differences are examined in terms of being complementary or competing. Three differences are outlined in the following. One difference between SDT and JCT is their starting point; JCT stems from work design theories and belongs to the organizational behavior research. SDT on the other hand is a general motivational theory that explains human behavior across domains. Second, the two theories

differ in their focus; JCT emphasizes aspects and characteristics at work (five job dimensions) that increase internal motivation and performance among other outcome variables. SDT has an emphasis on basic psychological needs which in turn predicts positive outcomes. Whereas JCT focuses on the source in the situation and hence referring to the ‘supply-side,’ SDT emphasizes the needs of a person and hence has a ‘demand’-focus. The job characteristics in JCT tend to promote the basic psychological needs in SDT (e.g., feedback may promote need for competence and job autonomy may influence need for autonomy). SDT and JCT are therefore consistent in this particular view.

The two differences mentioned above are looked upon as complementary rather than competing, in line with Kanfer’s (1990, p.88) comparison. Further, a third difference is the type of motivation included in the theories. Whereas Hackman and Oldham focus on one type of motivation (internal), SDT distinguishes between different types of internal motivation: introjected, identified, integrated and intrinsic. In addition, SDT includes external regulation and thus, the interplay and trade-offs between the different forms of motivation are considered. Internal motivation the way it is defined in JCT differs from the definition of intrinsic motivation in SDT. Internal motivation in JCT refers to the degree to which an individual experiences positive internal feelings when performing effectively on the job. Examples of items measuring internal work motivation include “I feel a great sense of personal satisfaction when I do this job well” and “I feel bad and unhappy when I discover that I have performed poorly on this job” (Hackman & Oldham, 1980, pp. 282-283). The latter seems related to the introjection type of regulation within the SDT definition. Moreover, in contrast to the definition of intrinsic motivation that refers to the pleasure and satisfaction inherent in the activity, internal motivation in JCT focuses on the outcome/performance of the activity. Internal motivation is treated as dependent variable in JCM and as a mediator in SDT, although, it is stated in JCM that causal priorities among the outcome variables are not addressed in the model.

Two issues of similarities are outlined in the following. Firstly, both theories have a focus on the issue of autonomy. SDT highlights the interpersonal style of managers in which they are autonomy supportive, and hence influence the need for autonomy. Although job autonomy in JCT is a job dimension, it can indirectly be viewed as an autonomy supportive environment as it is mainly the managers and leaders that are considered to impact job autonomy in the workplace. Secondly, there are similarities between need satisfaction in SDT and critical

psychological state in JCT. Aspects of the psychological state ‘knowledge of results,’ which is promoted by feedback in JCT, are considered to heavily overlap with the ‘need for competence’ that also is influenced by feedback. Likewise, ‘experienced responsibility’ and ‘need for autonomy’ are regarded as correlating. The link between ‘experienced meaningfulness’ and ‘need for relatedness’ is not looked upon as overlapping dimensions. To my knowledge, no previous studies have compared basic psychological needs in SDT and critical psychological states in JCT. However, I consider them to correlate as explained previously.

Lastly, one difference that is regarded as competing is explained. SDT does not consider need strength as an individual difference, but rather causality orientation as individual difference. Although the concepts of growth need strength and autonomy orientation are not similar, they are assumed to correlate. I know of no studies where the two concepts are compared. Explanation for the concepts being related is therefore based on logical reasoning. Autonomy oriented people regulate their behavior on the basis of own interest and therefore choose environments where the need for perceived competence is satisfied. This includes learning and personal development (= growth need strength). SDT does not pay attention to the strength of the need (see Section 2.2.3). However, the main competing aspect occurs in terms of the role of individual differences. JCT proposes that the individual difference moderates the link between job dimensions and psychological state, and between psychological state and outcome variables. SDT, on the hand, proposes that individual difference account for independent variance. Autonomy orientation is looked upon as an independent variable and not a moderator variable in SDT. To sum up, I look upon the two theories (SDT and JCT) mainly as complementary rather than competing, except for one aspect. The two theories are competing with regard to the role of individual differences, which is investigated in this study (see Chapter 3.2).

2.4 Qualitative pilot study

There are two reasons why a qualitative pilot study was conducted. Firstly, the pilot study was conducted in order to ensure that the chosen variables based on theory were relevant in this study and research setting. Secondly, in order to reveal possible factors that were not covered in the theory described above, a qualitative pilot study was carried out. In this way, new variables could be added in the survey study. Further arguments and procedures for

conducting the qualitative study are described in Chapter 7. As the proposed hypotheses in the next chapters are based on existing theory as well as the qualitative pilot study, findings from the qualitative study are presented in the following. Findings from the ten interviews that were conducted are presented in the following. The importance of job autonomy was emphasized in the qualitative pilot study (from JCT). The fact that the employee could decide how to do the tasks and the order of completion of tasks was discovered as important for enjoying the work. Needs for competence and relatedness at work in order to experience excitement at work were also highlighted (in line with SDT). Competence was expressed in two ways: receiving feedback as well as optimal challenges. The latter was exemplified by possibilities for learning and developing in terms of opportunities to attend courses in interesting and useful subjects related to the job tasks. Findings from the interviews were in line with the existing theories (JCT and SDT).

A question to be asked is whether the qualitative pilot study discovered anything that was not included in the existing theory as described in Chapter 2. The answer is yes. Firstly, the role of relatedness at work on intrinsic motivation was strongly emphasized in the qualitative study. According to SDT, it is stated that although the need for relatedness is considered as a determinant of intrinsic motivation, autonomy and competence are regarded the most powerful influences on intrinsic motivation. In the qualitative study conducted, relatedness at work was highlighted as being very important among employees in both organizations in order to enjoy their work. Secondly, the link between relatedness at work and turnover has not been investigated within SDT to my knowledge. The qualitative pilot study discovered that relatedness at work influences turnover intention, e.g., by the following statement: “The social working climate is more important to me than high salary. I like my colleagues very much, and I would not quit this job if I for example was offered 50 000 NOK more per year in another organization” (50 000 NOK \approx 8000 USD). Another employee stated: “The reason to quit this job would be due to conflicts with my work colleagues or leader.” In other words, the interpersonal climate among colleagues may influence the employees’ intentions to leave an organization (shown in Figure 11, path e).

Due to the qualitative pilot study, relatedness at work is given an independent and central role when proposing hypotheses in the following.

3. ANTECEDENTS OF INTRINSIC WORK MOTIVATION

Theoretical underpinning to research question 1 is outlined in Chapter 3. *How are job factors, individual factors and social factors related to intrinsic work motivation?* The role of job factors, individual factors and social factors on intrinsic motivation are described in Chapters 3.1, 3.2 and 3.3 respectively.

3.1 The role of job factors

Job autonomy is of central concern in the Job Characteristics Model (JCM) (Hackman & Oldham, 1976, 1980). Job autonomy refers to the degree to which the individual are given freedom in “determining the procedures to be used in carrying it out” (Hackman & Oldham, 1976, p. 258). According to JCT, autonomy contributes to the critical psychological state ‘experienced responsibility,’ which in turn predicts internal motivation. When the job provides autonomy to the employee performing it, the work outcomes will be viewed as depending on their own efforts and initiative rather than instructions from the manager. As job autonomy increases, employees tend to feel more personal responsibility for work outcomes (Hackman & Oldham, 1980).

Job autonomy in JCT is closely related to and consistent with managerial autonomy support in SDT, also referred to as a social context variable. Autonomy support refers to managers offering choice, encouraging self-initiation, providing information in a non-controlling way and acknowledging employees’ perspective. According to SDT, autonomy support contributes to satisfy the need for autonomy. Need satisfaction for autonomy in turn predicts intrinsic motivation (Gagné & Deci, 2005). To be autonomous does not mean to be independent of other people, rather it means to feel choice and willingness when acting, regardless of whether the actions are independently initiated or a request from others (Chirkov, Ryan, Kim, & Kaplan, 2003). On the basis of JCT, SDT and previous research (see Section 2.2.5 and 2.3.5) it becomes clear that job autonomy is positively associated with intrinsic motivation.

In this study, job factors are represented by job autonomy. According to JCT, there are four additional job dimensions of importance to internal motivation. These are skill variety, task identity, task significance and feedback, which are not included in this study.

3.2 The role of individual factors

The rationale for including individual differences in this study is commented upon in the following. An environmental approach focuses on environmental contingencies and explanations are based on observable events, e.g. presence of job autonomy. This approach does not consider people's unique interpretation and does not provide an explanation of behaviors that make sense when considering people's experiences (Deci, 1980). On the other hand, the personal approach emphasizes people's strong internal forces that explain behavior. Little attention to environmental forces is emphasized in this approach. Vallerand (1997a) argues that a simultaneous investigation of motivation at both the trait (global) level and more specific (context) level is of importance. These arguments go along with Latham and Pinder (2005) emphasizing the importance of individual difference variables on motivation.

Traits are considered useful descriptions of how individuals generally behave (Cooper, 2002). Personality traits reflect a person's style of behavior. The question could be asked as to why autonomy orientation is the chosen individual difference in this study. Individual differences are dimensions of the personality that are regarded relatively stable. There are two individual difference concepts used in SDT. The first is *regulatory styles*, which refer to the specific level of behaviors. Regulatory styles and Organismic Integration Theory (OIT) are presented in Section 2.1.2 and 2.2.2 in which external, introjected, identified, integrated and intrinsic styles of regulation are discussed. The second individual difference is a broader concept that applies across domains and concerns people's general orientations toward motivation and behavior. This is called *general causality orientations*, which are presented in section 2.2.4 (Causality Orientation Theory). These aspects of personality orient people in varied ways. Different causality orientations stem from the degree to which the organismic integration process operates effectively, as it interacts with social contexts that allow versus thwart satisfaction of the basic psychological needs. Deci (1980) emphasizes the importance of the interplay between the person and the environment with respect to self-determination. Individuals with different degrees of autonomy engage in internal and external environments that are more or less autonomy supportive. This interaction of the person and the environment (context) results in greater or lesser satisfaction of the basic psychological needs. When employees are more successful in integrating challenges, they will maintain more intrinsic motivation. Hence, individual differences in autonomy orientation will play an important role when studying factors influencing intrinsic motivation.

Individual differences in causality orientations are considered relatively stable. Trait level differences between people are emphasized in this study, meaning that variation in trait within a person over time is not given attention. The role of individual factors is explained by SDT and JCT. Individual differences in this study are, as explained previously, autonomous causality orientation. The role of autonomy orientation is discussed in Section 3.2.1. In addition perceived competence is included in this study. Perceived competence is not considered as an individual difference in personality dimensions across domains, but it is regarded as an individual factor. The role of perceived competence is discussed in Chapter 3.4. The next section generates two different hypotheses regarding the role of autonomy orientation. The controlled and impersonal aspects within causality orientation are not included in this study.

3.2.1 Autonomy orientation

Two competing hypotheses regarding the role of autonomy orientation are proposed. According to SDT, employees' individual differences in autonomy orientation (described in Section 2.2.4) and an autonomy supportive work climate influence autonomous work motivation (Gagné & Deci, 2005). This theoretical research issue has not been examined in a work setting. The closest study to this issue is the research by Baard et al. (2004), showing that both autonomous causality orientation and autonomy support provided basic need satisfaction, which further led to increased performance and well-being. Hence, the research showed two main effects on need satisfaction and the outcomes. Outside work settings, it is found that both the individual difference in autonomy orientation and the contextual variable autonomy support, influence autonomous motivation to participate in a weight-loss program (Williams et al., 1996)

Based on these studies and the theoretical framework of SDT, Gagné and Deci (2005) proposed a research agenda with a hypothesis stating that "Employees' autonomous causality orientations and autonomy-supportive work climates will have additive, independent positive effects on employees' autonomous motivation and positive work outcomes" (p. 350). Based on the explanations above, the following hypothesis in this study is proposed:

Hypothesis 1 - alternative a): *Job autonomy and autonomous causality orientation account for independent variance in employees' intrinsic work motivation.*

The JCT approach is somewhat different from SDT with regard to individual differences. According to JCT, individual difference of growth need strength (GNS) is assumed to moderate the relationship between job characteristics and outcome variables. This indicates that some people have a stronger need than others for personal learning and for developing themselves. Growth need strength may affect how people react to their jobs in two different ways, firstly the link between job characteristics and psychological states, and secondly between the psychological states and internal motivation. The first link means that employees with high growth need strength will experience the psychological state more strongly when their job is high in MPS, in this study high in job autonomy. The second link specifies that employees with high growth need strength will respond more positively to the psychological states than those with low growth need strength. The basic prediction is that people who have a high need for personal growth and development will respond more positively to a job with high job autonomy than people with low growth need strength (Hackman & Oldham, 1976, 1980).

The review and meta-analysis by Fried and Ferris (1987) supports the moderating role of growth need strength between the job characteristics – performance relationship. They reported two studies examining the moderating effect of GNS on the psychological states – job performance relationship, and five studies examining the moderating effect of GNS on the MPS – performance relationships. Although the moderating role of GNS was confirmed, they concluded that additional data was needed as a basis for more confident conclusions concerning potential moderators of the job characteristics – outcome relationships. Although the concept of GNS and autonomy orientation are not identical, they are, as explained previously assumed to be correlated (see Section 2.3.6). Could it be the case that employees high in autonomous causality orientation would be more intrinsically motivated in an autonomy supportive environment than people low in autonomy orientation? Likewise, might it be the case that employees high in controlled causality orientation would do better in controlled contexts? To my knowledge, no previous studies have investigated the moderating role of autonomy orientation on job autonomy – intrinsic motivation relationships. However, based on JCT and the findings above, the following hypothesis regarding the role of individual differences is proposed.

Hypothesis 1 – alternative b): *The relationship between job autonomy and intrinsic motivation is moderated by autonomous causality orientation.*

I see two alternative outcomes of the moderator effect: i) There will be a positive relationship between job autonomy and intrinsic motivation for employees with high autonomy orientation. This statement is based on JCT, which uses growth need strength (GNS) as the individual difference, and not autonomy orientation as in this study. ii) The other possibility of the moderation effect is that there will be a positive relationship for employees with low autonomy orientation. Black and Deci (2000) found that students with low autonomous self-regulation benefited more (in terms of performance) from autonomy support than students with high autonomous self-regulation did. Kuvaas (2007a) found that autonomy orientation moderates the link between perceptions of developmental goal setting and feedback involved in performance appraisal and work performance. The study showed a positive effect for those with low autonomy orientation and a negative effect for people with high autonomy orientation. In SDT, autonomy orientation accounts for independent variance to autonomous work motivation (Baard et al., 2004; Gagné & Deci, 2005), which conflicts with the findings by Kuvaas (2007a).

3.3 The role of social factors

There is a lack of research investigating the role of social factors on motivation (Morgeson & Campion, 2003; Parker & Wall, 2001). This study investigates the social factor ‘relatedness at work’ and its impact on intrinsic motivation and the behavioral outcome variables. Relatedness or belongingness concerns personal contacts or interactions with other people and a propensity of connectedness (Baumeister & Leary, 1995). Belongingness can be distinguished from general social contact as only the latter includes interactions with people one dislikes or strangers. The need for relatedness or need to belong has two main features. First, people need frequent interactions with the other person. Second, people need to perceive a bond or relationship. The latter aspect provides a relational context to one’s interactions, indicating that the perception of the bond is essential for satisfying the need to belong. According to Baumeister and Leary (1995), the need to belong is a fundamental human motivation. The hypothesis that people are motivated to form and maintain interpersonal bonds is not new. Maslow (1954) placed “love and belongingness needs” in the middle of the

motivational hierarchy, stating that belongingness needs do not emerge until food, hunger and safety are satisfied.

According to Self-Determination Theory (and more specifically BPNT), basic needs for autonomy, competence and relatedness at work must be satisfied in order to experience intrinsic work motivation. Although autonomy and competence have been found to be powerful influences on intrinsic motivation, theory suggests that relatedness also plays a role in the maintenance of intrinsic motivation (Deci & Ryan, 2000). SDT hypothesizes that intrinsic motivation is more likely to be present in contexts characterized by a sense of secure relatedness. However, there are situations in which relatedness is less central to intrinsic motivation than autonomy and competence. People may engage in intrinsically motivated behaviors alone, e.g. hiking, suggesting that relational supports may not be an important factor in maintaining intrinsic motivation for some activities.

Of interest in this study, is the degree to which relatedness (or belongingness) contributes in maintaining or enhancing intrinsic work motivation. Previous studies that have focused on relatedness in a work setting, investigate basic need satisfaction which means that autonomy, competence and relatedness are included in one variable (Baard et al., 2004; Deci et al., 2001; Ilardi et al., 1993; Kasser et al., 1992; Lynch et al., 2005). To my knowledge, only one previous organizational study has separated relatedness as a variable in itself in order to specifically look at the relationship between relatedness and work motivation (Richer et al., 2002). A positive relationship between feeling of relatedness and work motivation was found in the mentioned study. The qualitative pilot study also revealed the importance of relatedness for enjoyment at work in both organizations. Based on SDT and on the qualitative pilot study, relatedness is looked upon as an independent variable in addition to job autonomy as showed above. The following hypothesis is proposed.

Hypothesis 2: Job autonomy and relatedness at work will account for independent variance in employees' intrinsic work motivation.

3.4 Perceived competence

Regarding the classification of job factors, social factors and individual factors, perceived competence is placed closest to the category called individual factors. However, autonomy orientation is a more stable individual factor across situations than perceived competence.

Intrinsic motivation is based in the need to be competent. Perceived competence concerns the feeling of effectance. The need for competence is rooted in White's (1959) need for effectance as a basic motivational propensity that energizes a wide range of behaviors. The energy behind the activity is referred to by White to as *effectance motivation* and the corresponding affect is referred to as the feeling of efficacy. According to SDT (and specifically CET), needs for competence and autonomy underlie intrinsic motivation which means that people need to feel competent and autonomous to enhance or maintain their intrinsic motivation. A relationship between perceived competence and intrinsic motivation is explained as: the more competent a person perceives herself/himself to be at some activity, the more intrinsically motivated will she/he will be at that activity. This predicted relationship relies on a condition of optimal challenges. CET highlights the importance of interesting, optimally challenging activities for maintaining or enhancing intrinsic motivation. Activities that are too simple and therefore provide no optimal challenges are not expected to be intrinsically interesting. In addition, intrinsic motivation will remain high if a person receives positive competence feedback. Even negative feedback may maintain intrinsic motivation if the negative feedback helps the person to understand how to do better on the task next time (Deci & Ryan, 1985a).

3.4.1 *Mediating role of perceived competence*

It is posited so far in Chapter 3 that job autonomy and relatedness at work are believed to affect intrinsic motivation. In addition, the individual difference of autonomy orientation is regarded as an independent or moderator variable. As far as the relationship between perceived competence and intrinsic motivation is concerned, CET as well as empirical studies support the positive relationship between perceived competence and intrinsic motivation. An example (and the first SDT-study in this context) was the experiment done by Deci (1971). The relationship between perceived competence and intrinsic motivation was investigated by considering the effects of positive feedback on intrinsic motivation. He found that people receiving positive feedback from the experimenter were more intrinsically motivated than

people who received no feedback were. Similar findings were reported by Blanck, Reis and Jackson (1984).

A positive relationship between perceived competence and intrinsic motivation is expected. How then is perceived competence related to autonomous causality orientation, job autonomy and relatedness at work? Regarding the first mentioned variable, the personality dimension autonomy orientation is proposed to positively affect perceived competence. Baard et al. (2004) supports the proposition, finding that there is a positive relationship between autonomy orientation and perceived competence. Given that autonomy orientation is positively related to intrinsic motivation (which means that hypothesis 1a is supported), the following hypothesis is proposed:

Hypothesis 3: The relationship between autonomy orientation and intrinsic motivation is mediated by perceived competence.

As theorized, job autonomy is strongly related to intrinsic motivation, and perceived competence is positively correlated with intrinsic motivation. The question as to how job autonomy is related to perceived competence is the next step to examine. According to SDT, the relationship between perceived competence and intrinsic motivation relies on a necessary condition that the perceived competence must exist within the context of some perceived self-determination. Job autonomy indirectly reflects the social context of an autonomy supportive environment. According to CET, contextual conditions such as autonomy support (i.e., providing employees with information and choice, taking the other's perspective and acknowledging the other's feelings and perceptions) ensure people the possibility of satisfying their sense of competence, thus leading to intrinsic motivation. The study by Baard et al. (2004) shows a positive relationship between perceived autonomy support and perceived competence. In line with Baard et al.'s findings, Vallerand, Fortier and Guay (1997b) found that autonomy supportive environments positively influenced student's perceived competence. In turn, students' perception of competence increased their level of self-determined motivation which reduce the students' intention to actual dropout behavior. Guay, Boggiano and Vallerand (2001) found that perceived competence partially mediated the relation between teachers' autonomy support and changes in intrinsic motivation. Feelings of self-determination seem closer related to supervisory behavior than perception of one's competence (Richer & Vallerand, 1995). Since managers' autonomy support seems to be

closer connected to self-determined motivation than perceived competence, and since managers' autonomy support is closely related to job autonomy, it is assumed that job autonomy influences intrinsic motivation directly as well as through perceived competence. Hence, partial mediation is expected. Hypothesis 4 is proposed:

Hypothesis 4: The relationship between job autonomy and intrinsic motivation is partially mediated by perceived competence.

What about the relationship between relatedness at work and perceived competence? No previous organizational SDT-studies have investigated this link to my knowledge. However, based on SDT arguing that task feedback enhances perceived competence, it is likely to believe that relatedness at work partly leads to task-specific feedback. The qualitative pilot study also supports this rationale and the following hypothesis is put forward:

Hypothesis 5: The relationship between relatedness at work and intrinsic motivation is partially mediated by perceived competence.

As argued, perceived competence is considered to mediate the relationship between the antecedents (job autonomy, autonomy orientation and relatedness at work) and intrinsic motivation. Why does not this study regard perceived competence as a moderator variable? If the link between job autonomy and intrinsic motivation were moderated by perceived competence, it would be suggested that job autonomy does not have a positive effect for people whose competence is low compared to employees with high perceived competence. The other possible outcome of perceived competence as a moderator would suggest that job autonomy does not have an effect for people with high competence, but that job autonomy has an effect for people with low competence. According to SDT, autonomy supportive environment (job autonomy) is at least as important for them as for people whose competence is high. People low in competence may need more structure, but not more control.

3.4.2 Perceived competence in other traditions

Bandura's (1977) concept of self-efficacy is related but somehow different from SDT's concept of competence. From a theoretical perspective, Bandura's concept of self-efficacy is different from perceived competence. Self-efficacy theory focuses on the extent to which people are able to engage in behaviors that will lead to desired outcomes. Self-efficacy can be

regarded as instrumental for the attainment of reinforcements, instrumental in order to get desired outcomes. The concept of competence within SDT does not focus on the outcome or end state. In addition, whereas SDT specifies two broad types of motivation (autonomous and controlled), Bandura's theory does not distinguish between types of motivation, which means that self-efficacy could yield either controlled or autonomous forms of regulation.

Like self-efficacy, self-concept is presumed to explain and predict one's thoughts, actions and emotions. Both self-efficacy and self-concept share the centrality of perceived competence in construct definition. Both constructs predict emotion, motivation and performance to varying degrees (Bong & Skaalvik, 2003). However, self-concept is more concerned with what skills and abilities the individuals possess. Self-efficacy focuses on what individuals believe they can do with whatever skills and abilities they may possess. Whereas self-concept represents the individual's general perception of the self in given domains, self-efficacy represents one's expectations and convictions of what they can accomplish in a given situation (*ibid*). Hence, self-efficacy is regarded more context and task specific than self-concept. Self-concept and perceived work competence in the present study are related concepts in the way that they are not as task specific as self-efficacy. Further, whereas self-concept is generally considered domain specific, self-confidence may be a more general concept (Kanfer & Ackerman, 2005, p.342).

In contrast to regarding the competence as domain specific, the concept of general expectancy as a central common core of personality dispositions related to achievement areas is proposed by Haugen and Lund (1999). A general bipolar expectancy factor based on achievement motives, global self-esteem, self-efficacy, depression and defensiveness among others was found, in which one corresponded to positive expectancy and the other to negative expectancy. As this study seeks to explain factors facilitating intrinsic work motivation, the domain specific variable 'perceived competence' at work is regarded as a reasonable explanatory variable, and not a general bipolar expectancy factor. As argued, autonomy orientation is the chosen individual difference or aspect of the person that is included in present study (Chapter 3.2). Whereas autonomy orientation is viewed relatively stable across domains, perceived competence is considered a domain specific variable that is influenced by the personality variable.

The literature on achievement motivation has recently focused more clearly around the concept of competence. It is argued that achievement motivation is not clearly defined in the achievement motivation literature and that there is no shared understanding of how achievement should be conceptualized (Elliot & Dweck, 2005). It is argued that the achievement literature is best viewed through the lens of competence (ibid). The basic premise regarding the energizations of competence-relevant behavior in the competence motivation literature is in line with SDT. Competence is regarded an inherent psychological need of the human being. Competence motivation is presumed to be present at birth, it is an appetitive desire to explore and master the environment which is reflected in the infant's natural tendency toward curiosity. Within the competence motivation literature in an organizational setting, personality traits are considered determinants of work competence that in turn influence job performance (Kanfer & Ackerman, 2005). This thinking is in line with the view of competence in the present study. Based on the description above, and the arguments made in Chapter 3.4, alternative hypotheses regarding perceived competence are not proposed.

3.5 Moderator and mediator variables

Hypothesis 1 (alternative b) regards autonomy orientation as a moderator variable. Hypotheses three, four and five regard perceived competence as a mediator variable. The concepts of moderation and mediation are therefore outlined in the following.

3.5.1 *Moderator variables*

Due to increasing complexity of hypothesized theoretical explanations of organizational phenomena, 'moderator variables,' 'moderated relationships' and 'interactions' have been of considerable interest in the organizational psychology. Some confusion by the topic of moderators exists. A clarification of what is meant by a moderator variable in this study is therefore presented.

Any theory that proposes an interaction of two independent variables X and Z in determining a dependent variable Y, or equivalently proposes that a dependent variable Y is a joint function of two independent variables X and Z, is hypothesizing that the form of the relationship between X and Y is conditional upon Z. By form is meant the relationship indicated by the coefficients of the regression equation (Arnold, 1982). In this case, Z could

be labeled a “*moderator*” variable. In addition, if the form of the relationship varies with Z, then X and Z are said to *interact* in determining Y. Another way to put it would be to say that Y is a joint function of X and Z. Investigation of whether the form of relationships between the two variables X and Y varies systematically with values of a third variable Z can only meaningfully be carried on in the presence of some a priori hypothesis regarding the influence of variable Z upon the relationship between X and Y (Arnold, 1982).

3.5.2 Mediator variables

Whereas moderators indicate when certain effects will hold, the mediator variables seek to explain how or why such effects occur. A mediator is often an internal, psychological variable. In general, a variable functions as a mediator to the extent that it accounts for the relation between the independent variable and outcome variable. According to Baron and Kenny (1986), a variable functions as a mediator when it meets the following conditions: i) the independent variable significantly accounts for variations in the mediator. This is marked with path ‘a’ in Figure 1. ii) The mediator variable significantly accounts for variations in the dependent variable (i.e. path ‘b’). iii) When paths ‘a’ and ‘b’ are controlled, a previously significant association between the independent and dependent variables is not significant any more. The strongest demonstration of a mediation effect occurs when path ‘c’ becomes zero.

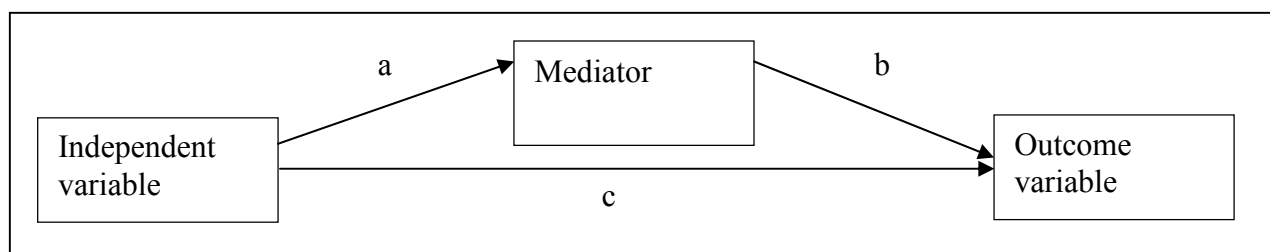


Figure 1. Mediator variable.

Most areas of psychology have multiple causes, and a more realistic view may be to seek mediators that significantly decrease path ‘c’ rather than eliminate the association between the independent and dependent variables. A differentiation between partial mediation and full mediation is made. Full mediation depends on a non-significant relationship between the independent variable and outcome variable when the mediator is entered. When partial mediation is found, path ‘c’ diminishes after entering the mediator, but path ‘c’ is still significant (Mathieu & Taylor, 2006). Both of these types of mediation effects are distinguished from indirect effects. A mediation effect implies that the relationship between

the independent and outcome variable was significant initially (ibid). There is no such assumption in the indirect effect assessment. Mediation is tested in this study through the Sobel test (see Chapter 8.5).

4. CONSEQUENCES OF INTRINSIC WORK MOTIVATION

In this chapter, theoretical perspectives underlying research question two are presented. *How is intrinsic work motivation related to performance and turnover intention?*

4.1 Performance

SDT claims that there is a positive relationship between intrinsic motivation and performance. The argumentation is that through satisfaction of basic psychological needs, intrinsic motivation is enhanced, which leads to psychological well-being and performance. When an activity is interesting or enjoyable, task performance is expected to be high. Although the theory also addresses issues such as types of motivation to effective performance, these issues are not discussed in this study.

Six of the SDT-studies presented in Table 3 include performance as an outcome variable of which one is a theoretical study. Most of these studies investigate the relationship between basic need satisfaction and performance. The Kasser et al. (1992) study found a positive relationship between intrinsic need satisfaction and performance. This was supported by the Baard et al. (2004) study as well as the Deci et al. (2001) study. The latter used an engagement variable, including both behavioral and emotional aspects of engagement. Kuvaas (2005) found a positive relationship between intrinsic motivation and performance in different independent samples with a mean of standardized beta-coefficient of .30. As well, the theoretical paper by Gagné and Deci (2005) suggests a positive relationship between autonomous motivation and performance. JCT includes both internal motivation and performance in the model, though they are both treated as outcome variables and causal priorities among the outcome variables are not addressed in the model.

This study measures performance by including both behavioral engagement and an expectation of one's own performance (see Chapter 7.5). Table 3 shows that few previous studies have investigated the relationship between intrinsic motivation and performance in a

work setting. However, based on theory and empirical findings presented above, the following hypothesis is proposed:

Hypothesis 6: There is a positive relationship between intrinsic work motivation and performance in organizations.

Perceived competence may also affect performance directly without influencing intrinsic motivation. The argument is that it is possible to feel competent and therefore perform well without enjoying the activity itself (intrinsic motivation). It is therefore expected that there is a direct relation between perceived competence and performance as well as between perceived competence and intrinsic motivation (shown in Figure 11 path f).

4.2 Turnover intention

In addition to performance, work turnover is an issue of great organizational concern. Invested money and time related to hiring and training an employee who leaves the organization are significant, and are lost forever. Turnover is associated with negative organizational outcome.

Turnover intention is defined in this study as the intent to leave an organization (Kuvaas, 2006a). Turnover intentions are related to actual turnover behavior (Richer et al., 2002). An advantage of including turnover intention instead of actual turnover, as in this research, is that the actual processes of people's implemented behavior are included. For example, bad working conditions may not necessarily lead to actual turnover. However, they might lead to turnover intention that might eventually develop into behavior (ibid). In addition, self-reported turnover intention is convenient to measure as other self-reported variables are measured as well in this study.

JCT includes turnover as an outcome variable, but since both internal motivation and turnover are treated as outcome variables in the model and since relations between outcome variables are not addressed, association between intrinsic motivation and turnover are not addressed based on JCT. As well, the theory of self-determination neither specifies nor proposes any association between intrinsic motivation and turnover or turnover intention (Deci & Ryan, 1985a; Ryan & Deci, 2000a). However, because self-determination is associated with

enhanced psychological functioning, it is hypothesized that self-determined motivation or intrinsic motivation leads to positive consequences. To the best of my knowledge, only two previous SDT-studies have included a turnover or turnover intention variable, as shown in Table 3. The study by Richer et al. (2002) shows a motivational model of work turnover: work motivation leading to work satisfaction which again is negatively related to turnover intention. In addition, Kuvaas (2005) reported a negative relation between intrinsic motivation and turnover intention.

Studies concerning turnover intentions in the health sector and specifically among nurses are reported in Janssen, de Jonge and Bakker (1999) and Janssen, de Jonge and Nijhuis (2001). These studies (like JCT) treat intrinsic motivation and turnover intention as outcome variables. However, correlation matrices of the variables mentioned show significant negative zero-order correlations between intrinsic motivation and turnover intentions. I hypothesize the following:

Hypothesis 7: There is a negative relationship between intrinsic work motivation and turnover intention.

Regarding the association between relatedness at work and intrinsic motivation, a negative relationship is expected. The expectation is based on the qualitative pilot study (Chapter 2.4). In addition, Richer et al. (2002) found negative zero-order correlations between feelings of relatedness and turnover intentions items.

The mediating role of intrinsic motivation is not specifically investigated in this study. However, based on SDT and previous empirical studies, intrinsic motivation is assumed to be a mediator variable (not only an indirect effect) between the antecedents and outcome variables in this study. With this follows an expectation of a correlation between job autonomy and performance, between perceived competence and performance, between job autonomy and turnover intention, and between perceived competence and turnover intention. It is also expected that these zero-order correlations diminish when entering intrinsic motivation in the regression-analyses. However, this has not been tested due to the chosen focus in this study.

5. PROFIT AND NONPROFIT ORGANIZATIONS

Theoretical underpinnings related to research question three are given in Chapter 5: *Are findings from research questions 1 and 2 contingent upon type of organization?* After concept clarification and definition of profit and nonprofit organizations (Chapter 5.1), a discussion of possible similarities or differences in the profit and nonprofit sectors related to employees' intrinsic motivation is given (Chapter 5.2).

5.1 The concept of profit and nonprofit organizations

There is a debate within organizational literature on how to structure and divide sectors and organizations. A dominant model starts with the assumption that there are three sectors consisting of: 1) government or public sector, 2) business or forprofit organizations and 3) private nonprofit organizations (Jeavons, 1992). Organizations, which are neither profit maximizing nor governmental, are often referred to as third sector organizations or the nonprofit sector (Morris, 2000). Private nonprofit organizations are often distinguished from for-profits primarily in economic terms. Hence, nonprofit organizations can be looked upon as a large heterogeneous group of organizations that are not public and do not have a profit maximization purpose. Examples are political parties, voluntary institutions and private foundations. It is also common to relate assumptions of sector differences to types of *ownership* (Lorentzen, 2005). Profit organizations distribute profits to their owners. However, nonprofit organizations are not prohibited from earning profits, they must rather devote any surplus to financing future services or distribute it according to their purpose (Hansmann, 1987).

Even if one accepts the described division, the question remains of what more specifically distinguishes these sectors and organizations. Different ways of articulating these distinctions are offered (Hansmann, 1987; Morris, 2000). A useful way to further distinguish profit and nonprofit organizations is to look at the primary purposes of the organizations as an important distinction (Jeavons, 1992). Nonprofit organizations are often born and exist primarily to give expression to social, religious or moral values, as well as completing some specific tasks, e.g. by providing social welfare services. However, whether these organizations actually maintain and promote certain moral truths, social ideals or tenets of faith and differ from profit organizations in every day work, is a question of empirical character.

This study is limited to and has a focus on one specific part of the nonprofit organization category, that is, organizations based on *religious characteristics*. Sider and Unruh (2004) provide a typology including five categories of faith-based organizations: faith-permeated, faith-centered, faith-affiliated, faith-background and faith-secular partnership. The religious characteristics of an organization may differ from how it is operationalized. An interesting issue, though beyond the scope of this research, is to analyze how the nonprofit (faith-based) organization actually operates compared to recognition of the characteristics. I define organizations based on religious characteristics as organizations that are concerned to give witness to religious values as well as completing some tasks.

One profit and one nonprofit organization within the health sector in Norway are included in the research. The latter is an organization based on religious characteristics. Institutions from public sector are not included in this study.

5.2 Intrinsic motivation in profit and nonprofit organizations

Issues related to research question three concern to what degree one can expect differences in the link between antecedents and intrinsic motivation and the relationship between intrinsic motivation and outcomes. This is described in Section 5.2.3. In addition, a related question of relevance is whether employees' intrinsic motivation is contingent upon type of organization, which is discussed in Section 5.2.4. Given the focus on intrinsic motivation, only assumptions about extrinsic motivation are given in Section 5.2.1 followed by a brief presentation of the relationship between extrinsic and intrinsic motivation in Section 5.2.2.

5.2.1 *Assumptions of extrinsic motivation in profit and nonprofit organizations*

As described above, nonprofit organizations are often distinguished from profit organizations in economic terms. In addition, differences between profit and nonprofit organizations are defined in this study in terms of differences in ownership form and differences in initial or primary purpose of the organization. Based on these distinctions, it is assumed that wage rates in profit organizations are higher than in nonprofit organizations for similar types of work (e.g. among nurses in the two types of organizations). In turn, it is assumed that employees in profit organizations are more extrinsically motivated than employees are in nonprofit organizations. By extrinsic motivation is meant the external regulation type of motivation (see

Table 1), which refers to doing an activity in order to get rewards from the activity. Differences in salary between the two types of organizations were supported in the qualitative pilot study among employees in both organizations. The assumptions of wage differences and differences in extrinsic motivation among employees in the two organizations are tested in Chapter 8.

As the research questions indicate, the focus in this study is intrinsic motivation. Given the assumption of differences in extrinsic motivation among employees in the two types of organizations, the question of concern and relevance in this study is whether differences in intrinsic motivation among employees in the two organizations are present. In turn, the question of whether intrinsic and extrinsic motivation is independent or dependent upon each other arises.

5.2.2 Intrinsic versus extrinsic motivation

Regarding the relationship between intrinsic and extrinsic motivation, two different perspectives are considered. SDT (and more specifically CET) posits that external rewards may result in a change in perceived locus of causality from internal to external, resulting in decreased intrinsic motivation for the activity (Deci & Ryan, 1985a). Hence, external rewards may undermine intrinsic motivation. In a work setting, people expect to be paid. However, too much focus on the rewards and incentives may be experienced as controlling and therefore reduce the level of intrinsic motivation. Deci (1971) showed that the controlling nature of the reward undermined extrinsic motivation. This is explained by a shift from internal to external locus of causality. According to SDT, a negative relationship between intrinsic and extrinsic motivation is assumed. Although SDT indicates that extrinsic and intrinsic motivation may exist at the same time, high extrinsic motivation is regarded as incompatible with high intrinsic motivation. The two types of motivation (intrinsic and extrinsic) are not regarded as being additive, that is, the combination of the two types of motivation does not yield a higher level of motivation (Vallerand, 1997a). Hence, the two types of motivation are regarded as dependent upon each other.

On the other hand, theories have posited that the two types of motivation have an independent additive relationship (e.g. expectancy-value theory). This relationship indicates that the two types of motivations combined lead to a higher level of motivation. Within expectancy-value theory, it is posited that both intrinsic and extrinsic factors contribute to motivation (Eccles &

Wigfield, 2002). Four components of task-value as a predictor of performance are outlined: utility value, attainment value, intrinsic value and costs. As pointed out by Eccles and Wigfield (2002, p.120), the utility value captures more of the extrinsic motivation for engaging in a task. Hence, both intrinsic and extrinsic values contribute to motivation.

When it comes to the inquiry of possible differences in intrinsic motivation in the profit and nonprofit organization, the first view indicating a negative relationship between extrinsic and intrinsic motivation would make a case for a lower level of intrinsic motivation in the profit organization, given the assumption of a higher level of extrinsic motivation. The second view of independence between intrinsic and extrinsic motivation would not argue in this direction. However, the approach in this study is to examine to what degree the three basic psychological needs are satisfied in the two types of organizations, since need satisfaction is theorized to predict intrinsic motivation.

Since this study investigates antecedents of intrinsic work motivation, the possible differences in the antecedents of intrinsic motivation that are in focus in this study are examined. These are: possible differences in job autonomy, relatedness at work and autonomy orientation in the two types of organizations.

5.2.3 Differences or similarities in intrinsic motivation in profit and nonprofit organizations.

When addressing the question of intrinsic motivation in profit and nonprofit organizations, first there is a general discussion of the issue in light of the attraction-selection-attrition framework (Schneider, 1987). Thereafter, possible differences in the three antecedents of intrinsic motivation job autonomy, relatedness at work and autonomy orientation are investigated.

Based on the clarification of concepts in Chapter 5.1, profit and nonprofit organizations differ in ownership form (Lorentzen, 2005) and in their initial purpose of existence (Jeavons, 1992). Schneider (1987) provides a framework, proposing that purposes and goals of an organization determine the kind of people who are attracted to, selected by and stay with an organization. Employees of an organization are a function of an attraction-selection-attrition (ASA) cycle. It is argued that people are attracted to environments that have the same interests or profiles as themselves. The opposite side of attraction is attrition. An important finding for this purpose is that people that do not fit well in an environment will tend to leave it.

Regarding the issue of selection, it is hypothesized that through recruitment and selection procedures, organizations end up choosing people who share common personal attributes although they may not share common competencies, as an organization requires different competencies in order to survive. This thinking is in line with self-selection mechanisms described by Kaufmann and Kaufmann (2003, p.275). Organizations can then be typed by people sharing many common attributes and differing with respect to specific competencies. The attraction-selection-attribution framework yields the following proposition: “Attraction to an organization, selection by it, and attrition from it yield particular kinds of persons in an organization” (Schneider, 1987 p. 441). The perspective argues for inseparability of person and situation where persons cause human environments as much as environments cause persons. Aadland (1994a, p. 32) also argues that values of an organization influence the employees’ values. An implication of the ASA framework is that attraction, selection and retention of certain kinds of people who are similar to each other will develop certain types of cultures. By culture, it is meant that people share a common set of open and hidden values (Aadland, 1994b). An empirical study by Jacobsen (2001) supports the selection mechanism. By comparing students on professional (nurses, teachers) versus nonprofessional (administration) training programs, he found that people with a certain kind of values selected certain types of education, and that these values did not dramatically change over the three-year period of education.

The ASA framework may argue for differences in motivational profile in profit and nonprofit organizations. As profit and nonprofit organizations differ with respect to initial purposes and goals of the founder(s), different kinds of people may be attracted to different sectors. Jurkiewicz, Massey and Brow (1998) support this assumption. Their comparative motivational study of private and public organizations showed that public employees are significantly different from private sector employees with respect to motivational aspects of the job. Whereas private sector employees ranked ‘high salary’ to be the most important factor, public sector employees saw ‘a stable and secure future’ to be the most important. Significant differences in motivational profiles may be based in the ASA framework. It has been shown that private sector employees value high salary as more important than public employees do. Hence, profit workers may possess a higher level of extrinsic motivation than employees do in other sectors. However, whether differences in intrinsic motivation are

present or not, will be discussed by investigating possible differences in job autonomy, relatedness at work and autonomy orientation.

Employee job autonomy is linked to management and leadership in the organization. A central question is therefore to what extent the leader's controlling style or the leader's autonomy supportive style will systematically differ in the two types of organizations. (The terms managers and leaders are used interchangeably in this study). Based on the definition in Chapter 5.1, a relevant question is whether profit and nonprofit organizations differ in job autonomy due to different ownership forms. Although the following argument is not theoretically or empirically based, it can logically be argued that ownership form may influence job autonomy in organizations that operate within a stable context such as the health sector. In contrast, innovative contexts with i.e. lack of stable technology will probably not differ in job autonomy to the same extent. Pressure from owners in profit organizations within the health sector may control leaders in profit organizations to a greater extent than nonprofit organizations, hence less job autonomy among profit organization employees may be present in the organization and among the employees.

What about differences between profit and nonprofit organizations regarding relatedness at work? Concerning differences in profit and nonprofit organizations, a review by Schepers et al. (2005) reveals empirical evidence showing that compared to employees in the profit sector, employees in nonprofit organizations may be motivated by different factors such as altruism and social contacts. It is therefore a possibility that the variable relatedness at work may be higher in nonprofit organizations than profit organizations.

With regard to autonomy orientation, the specific issue of interest is the effect of the ASA framework on individual difference measures such as autonomous causality orientation. How far does the framework go? In this respect, the framework is limited, stating that the personality and interest measures are terms used at the organizational level and that "they do not refer to individual differences within organizations" (Schneider, 1987 p. 447). To my knowledge, no previous studies of nonprofit organizations have included the individual difference autonomy orientation. Likewise, no comparative organizational study has included causality orientation. Therefore, only speculations would suggest possible differences of autonomy orientation among employees in profit and nonprofit organizations (here organizations based on *religious characteristics*). When following the ASA framework it

might be possible that Christian employees select a Christian hospital to a greater extent than a non-religious employee do. For example, to what extent is there a link between the employees' Christian values and employees' autonomous causality orientation? An argument for stating that religious employees generally could be less autonomy oriented, are due to a person's feelings that the religion is controlling one's actions. An example could be a person feeling she/he has to educate herself to become a nurse or a doctor because she feels 'controlled' by the religion to help other people. However, an argument for the opposite view with the same example could easily be made: Due to the choice of following a specific religion, she/he chooses to become a nurse or a doctor in order to fulfill a wish of helping others. I can neither theoretically, empirically nor logically argue that there are differences in employees' autonomy orientation across types of organizations.

Some tendencies and pre-understanding of possible differences in intrinsic motivation across sectors are outlined above. Based on the description above, the following research question is put forward for exploration and investigation:

Does intrinsic motivation differ among employees in profit and nonprofit sectors?

5.2.4 Relationship between the variables

The antecedents – motivation link in this study is closely related to the link between basic psychological needs and intrinsic work motivation in SDT. The three basic psychological needs, which are need for autonomy, relatedness and competence, are hypothesized to be innate, essential and universal. Satisfaction of basic needs leads to positive outcomes and wellbeing. According to Ryan and Deci (2000a) a basic need, whether is it psychological or physiological, is an energizing state. The needs are specified as essential nutrients that individuals cannot thrive without satisfying all of them, like people cannot thrive without water. Basic needs are therefore necessary for everybody. The need for relatedness reflects the variable relatedness at work in the current study. The need for competence refers to perceived competence and need for autonomy is captured and satisfied through job autonomy as well as autonomy orientation.

The study by Deci et al. (2001) supported the universality of needs in a cross-cultural organizational study of an individualistic (American) and a collectivistic (Bulgarian) culture. Work need satisfaction promoted engagement at work in both cultures, invariance was tested,

and analyses showed no differences in the need satisfaction – engagement link across cultures. Intrinsic motivation was not included in the study, and neither was a turnover variable. Due to the universality of the three needs (competence, relatedness and autonomy), it may be likely that the perceived competence – motivation link, relatedness – motivation link and the relationship between job autonomy and motivation in this study are invariant across types of organizations. Assumptions of strengths of the other relationships are not discussed. However, the following research question is put forward for investigation:

Are there differences in path coefficients between the antecedents, intrinsic motivation and the outcome variables in profit and nonprofit organizations?

As research question three is of an explorative character where expected tendencies are described, hypotheses are not derived from it. Rather, two research questions about intrinsic motivation and differences in profit and nonprofit organizations are put forward.

6. SUMMARY OF HYPOTHESES

Objectives 1, 2 and 3 of the study (see Chapter 1) are outlined in research questions 1, 2 and 3. Hypotheses are proposed based on the Self-Determination Theory (SDT), Job Characteristics Theory (JCT) and a qualitative pilot study.

Research question 1: How are job factors, individual factors and social factors related to intrinsic motivation?

Regarding job factors, a positive relationship between job autonomy and intrinsic motivation is expected. Arguments for this expectation are made from both a SDT and a JCT perspective. Regarding the role of individual factors, two competing hypotheses are proposed and tested. Both hypotheses are based on established theories. Alternative 1a) hypothesizes an additive effect, which is based on Self-Determination Theory. Alternative 1b) is grounded in the Job Characteristics Theory that proposes a moderator effect.

***Additive effect:** Hypothesis 1 - alternative a): Job autonomy and autonomous causality orientation account for independent variance in employees' intrinsic work motivation.*

The hypothesis is shown in Figure 2. The hypothesis is based on SDT, looking at autonomy supportive environment and autonomy orientation as two independent variables. Although, job autonomy and autonomy supportive environment are not similar concepts, they are regarded as related concept (see measurements, Chapter 7.5).

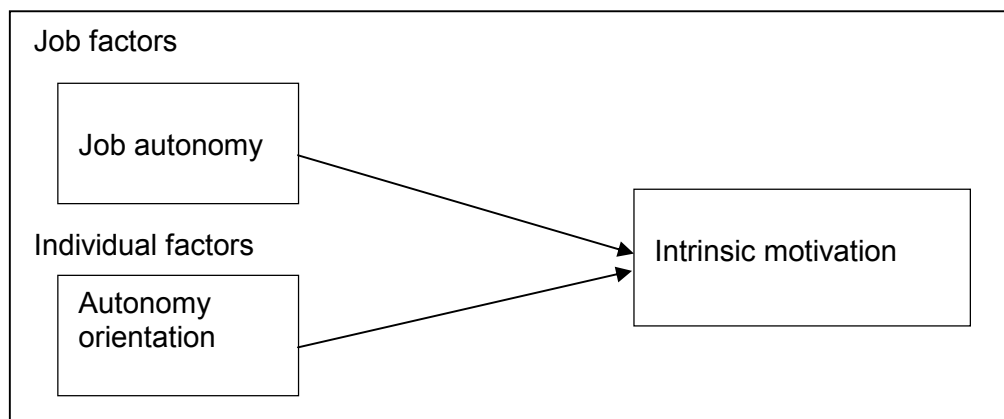


Figure 2. Additive effect: Hypothesis 1 – alternative a).

Moderator effect: Hypothesis 1 – alternative b): *The relationship between job autonomy and intrinsic motivation is moderated by autonomous causality orientation.* See Figure 3 for visualization of the hypothesis.

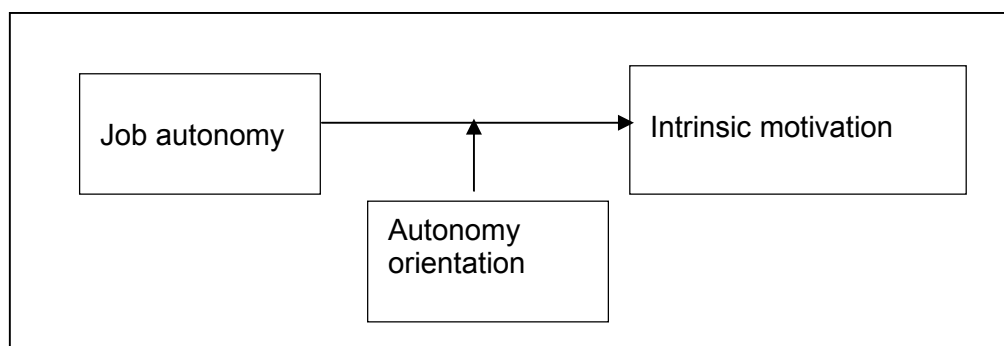


Figure 3. Moderator effect: Hypothesis 1 – alternative b).

Regarding social factors, the role of relatedness at work is investigated. Based on SDT and the qualitative pilot study, hypothesis 2 is proposed:

Hypothesis 2: Job autonomy and relatedness at work will account for independent variance in employees' intrinsic work motivation.

The hypothesis is shown in Figure 4. The hypothesis is based on the qualitative pilot study emphasizing the importance of social working climate and SDT (need for relatedness).

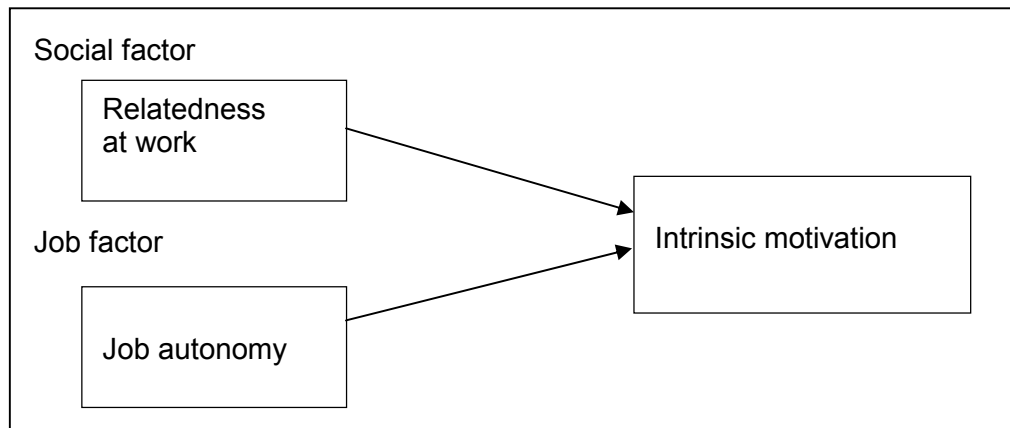


Figure 4. Hypothesis 2.

The variable perceived competence belongs to the category of individual factors. Regarding perceived competence, three hypotheses are proposed.

Hypothesis 3: *The relationship between autonomy orientation and intrinsic motivation is mediated by perceived competence.*

Hypothesis 4: *The relationship between job autonomy and intrinsic motivation is partially mediated by perceived competence.*

Hypothesis 5: *The relationship between relatedness at work and intrinsic motivation is partially mediated by perceived competence.*

Hypotheses 3, 4 and 5 are based on SDT and visualized in Figure 5, Figure 6 and Figure 7. Alternative hypotheses regarding perceived competence are (as explained in Chapter 3.4) not proposed.

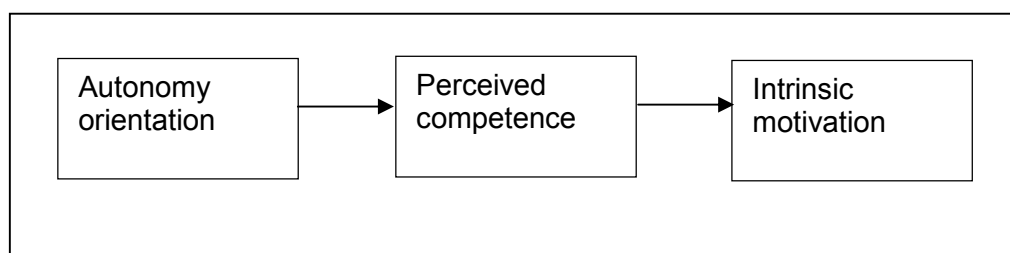


Figure 5. Hypothesis 3.

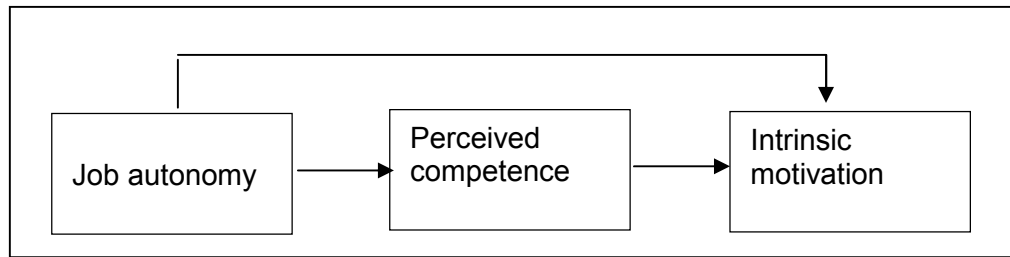


Figure 6. Hypothesis 4.

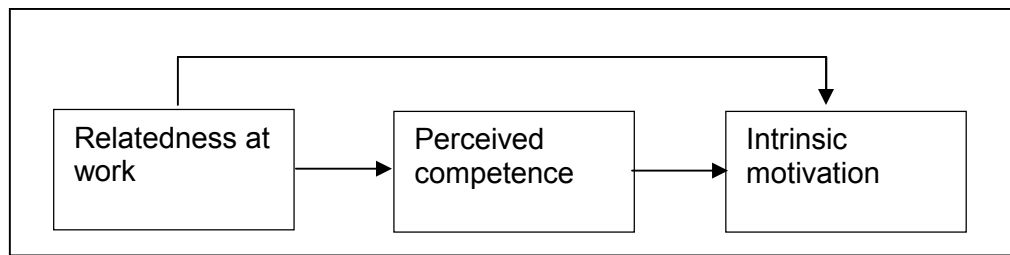


Figure 7. Hypothesis 5.

Research question 2: How is intrinsic motivation related to performance and turnover intention?

The outcome variables in this study are performance and turnover intention. Hypothesis 6 and hypothesis 7 are based on Self-Determination Theory.

Hypothesis 6: *There is a positive relationship between intrinsic work motivation and performance.*

Hypothesis 7: *There is a negative relationship between intrinsic work motivation and turnover intention.*

The overall research model depends on results from the alternative hypotheses. The research model is therefore presented after the results of hypotheses.

Research question 3: Are findings from research questions 1 and 2 contingent upon type of organization?

Two aspects are considered: (i) differences in intrinsic motivation and (ii) strength of the relationships between the variables in profit and nonprofit organizations. Based on theoretical framework, tendencies, logical argumentation and previous empirical findings are presented and two research questions are proposed:

Does intrinsic motivation differ among employees in profit and nonprofit sectors?

Are there differences in path coefficients between the antecedents, intrinsic motivation and the outcome variables in profit and nonprofit organizations?

In sum, research question 1 contributes to previous studies on intrinsic work motivation by including and proposing alternative hypotheses regarding the role of individual differences. Contribution to the knowledge base on outcomes of intrinsic motivation is indicated through hypotheses that follow from research question 2. Since nonprofit organization is included in this study, research question 3 extends the area where the SDT has been previously tested. In addition, the issue of intrinsic motivation in two types of organizations with different levels of external motivators, such as wage rates, is examined.

PART III

7. METHOD

The purpose of this chapter is to describe and discuss the methodological approach underlying the empirical part of the research. This chapter is divided into two parts. First, the focus is on conceptual issues described in the research strategy (Chapter 7.1). Then, a further specification of the strategy is presented in the research design (7.2), empirical setting (7.3), data collection procedure (7.4) and measurement of the variables (7.5). Chapter 7.6 discusses the validity and reliability of this study. Ethical considerations are presented in Chapter 7.7, and a summary of Chapter 7 is given in 7.8.

7.1 Research Strategy

The primary purpose of this study is theory testing, and the study aims to understand what factors influence employees' motivation in organizations. In the previous chapters, several hypotheses regarding the relationships between antecedents, intrinsic motivation and outcome variables were formulated. Given the purpose of this study, what kind of research strategy is most appropriate?

By research strategy is meant the approach to the management of this particular research. The design of the research is considered to be subsumed under the research strategy as a concretization and operationalization of the research strategy. According to Ragin (1992), there are two main problems social scientists face: "the equivocal nature of the theoretical realm and the complexity of the empirical realm" (p. 224). The primary goal for a researcher is to link the empirical and theoretical world, which is to use the theory to make sense of evidence, and to use evidence to refine and sharpen theory. In the light of obtaining such goals, quantitative and qualitative approaches as research strategies are discussed in the following.

7.1.1 Quantitative and qualitative approaches

Whereas McGrath (1982) classifies eight distinguishable research strategies, Yin (2003) categorizes five different research strategies: survey, case studies, experiments, histories, and

analyses of archival information. In contrast to McGrath (1982), Yin (2003) places all types of experiments in one category. Each of the five mentioned strategies has advantages and disadvantages and depends on the type of research question, the control an investigator has over actual behavioral events and the focus on contemporary as opposed to historical phenomena (Yin, 2003). In addition, a research strategy is determined by how much existing theory there is within the domain of interest as well as the main paradigm to which the researcher is working in and related to.

The issue of work motivation is a well documented phenomenon. Established theories concerning work motivation exist, and the conceptual frameworks are known. These elements steer towards an emphasis on the quantitative approach rather than qualitative approach. Qualitative research in general is of specific relevance in order to gain insight into yet incompletely documented phenomena or to get a fresh perspective on old and well-known areas. If taking a qualitative approach in this study, the focus would imply an effort to seek to understand the phenomena of motivation instead of seeking to explain factors influencing and facilitating the phenomena. Deeper meanings behind the employees' motivation would be emphasized rather than focusing on how motivation at work can be maintained and enhanced. Within the field of qualitative studies, different approaches and strategies exist. Grounded theory is one example of a qualitative approach and methodology for developing theory which is grounded in data that are systematically gathered and analyzed (Strauss & Corbin, 1994). Qualitative and quantitative approaches are not mutually exclusive. The difference is in the overall form and on the objectives and emphasis of the study (Ghauri & Grønhaug, 2002).

Since quantitative studies may be seen as appropriate for studying well-structured problems based on well-developed theory, the quantitative approach is emphasized in this study. However, a qualitative pilot study was conducted in this research in order to ensure that the chosen variables based on theory were relevant and in order to reveal possible new variables that have not been covered yet in existing theory. Instead of developing propositions and hypotheses based on theory alone, hypotheses were also based on the first investigating qualitative phase. The strategy concerning qualitative and quantitative approaches in this study is an emphasis on the quantitative approach due to the research questions, due to the existence of well established theories as well as due to the paradigm under which this research is conducted.

7.1.2 Proposition of alternative hypotheses

This study has a deductive approach where hypotheses are put forward to be tested. However, in contrast to the confirmatory oriented, single hypothesis approach in the social sciences, this research follows Platt's (1964) strategy which implies that competing alternative hypotheses are proposed and tested as described in the following.

Platt's (1964) strategy consists of first generating multiple hypotheses that are relevant to a particular phenomenon, and then performing experimental tests to eliminate (i.e. falsify) as many as these as possible. In this way, powerful and rapid progress may occur. Platt argues that scientists should not focus upon confirmation of a single, favorite hypothesis and thereby become wedded to a potentially incorrect theory.

Platt's position raises important questions about the actual behavior of scientists. Mynatt, Doherty and Tweney (1977) show that there is a bias in favor of confirmatory evidence as a possible general characteristic of human reasoning. The bias may be a failure to seek and utilize data or it may be expressed as a failure to seek or utilize evidence for alternative hypotheses, in contrast to Platt's strategy (ibid).

Platt's strategy is a method of inductive inference that consists of applying the following four steps to every problem in science: i) devising alternative hypotheses, ii) devising a crucial experiment with alternative possible outcomes, where each outcome as nearly as possible will exclude one or more hypotheses, iii) carrying out the experiment to get a clean result and iv) recycling the procedure. The procedure involves a cycle of multiple hypotheses, experimental elimination of the hypotheses, and new multiple hypotheses to be tested. Platt's metaphor of the method is like climbing a tree. At first, we choose to go to the left or right branch of the tree (or the experimental outcome chooses). At the next step, we choose left or right again. The next step was dependent upon the results of the previous one. Platt claims that inductive inference is not as simple and certain as deduction, because it involves reaching out to the unknown. He argues that the strong inference strategy is a "simple and old fashioned method" (Platt, 1964, p. 347). The reason he gives the method a special name is that "many of us have almost forgotten it" (ibid).

This study is not an inductive study. Nor is it an experimental study. However, the current study is based on Platt's strategy in the way that alternative hypotheses are proposed to be tested. The alternative hypotheses in this study are theory-based. The research model in the study is based on results of competing hypotheses testing. The research model is therefore presented after the hypotheses have been tested.

7.2 Research Design – options and choices

The design is the logical sequence that connects empirical data to the study's research questions and to its conclusions (Yin, 2003, p. 19). This includes data collection and analysis. Several classifications are relevant at the design level. Options and choices regarding the research design are presented in the following.

7.2.1 *Research design - options*

A number of hypotheses regarding the relationships between antecedents of work motivation, intrinsic work motivation and outcome variables are formulated. In order to test these hypotheses, the design of the study must make sure that the measurements of the variables are adequate, and that the variance is sufficient for testing the hypotheses. Sufficient variance in this study means variation in the antecedent variables: job autonomy, autonomy orientation and relatedness at work. Further, as the hypotheses propose relationship between variables, internal validity is given priority. Cook and Campbell (1979) classify quantitative designs into three broad categories: the classical experiment, the quasi-experiment and the non-experimental field study. The latter is the design chosen for this study, as described in the following.

The *classical experiment* allows the strongest test of the theory and is superior with regard to establishing causal relationships. However, the disadvantage of testing causal models through classical experiments is the need to reproduce complex social events in laboratory settings (e.g., relatedness at work). The classical experiment is therefore not regarded as an available option in this study.

The *quasi-experiment* was also eliminated for use in this study. The quasi-experiment is an experiment in a natural setting, while still preserving the main ideas of the classical experiment. The quasi-experiment allows some ability to manipulate the independent variable

but no control over random assignment and setting. Cook and Campbell (1979, p. 6) define quasi-experiments as “experiments that have treatments, outcome measures, and experimental units, but do not use random assignment to create the comparisons from which treatment-caused change is inferred.” In the quasi-experiment, the researcher is assumed to have a large degree of control of some of the variables, whereas other variables cannot be controlled. If the critical variables can be controlled, the same types of *ex ante* manipulation and *ex post* comparison are assumed as under the classical experiment. In this case, internal validity is kept high at the same time as the setting is made more natural. Using a quasi-experimental design in this study would imply that the levels of job autonomy and relatedness at work would be manipulated in the groups. Then, intrinsic motivation followed by performance could be studied *ex post*. Alternatively, the researcher could be provided access to different situations where the differences occurred naturally. None of these possibilities was available. The time perspective issue would also be an obstacle for this design. The quasi-experiment was therefore also eliminated as a realistic option.

The *non-experimental* field study is the main available design in this study. In order to ensure internal validity, three components are in focus: Isolation, association and direction (Bollen, 1989). Isolation means that influences other than those included in the model are ruled out. Association means that there is covariation between the independent (cause) and dependent (effect) variable. Direction of influence refers to the cause preceding the presumed effect in time. In order to demonstrate direction of influence, it is preferable that the researcher collects data from at least two periods. Unfortunately, time and resources eliminated this process in this non-experimental study. This research is therefore cross-sectional, where data on independent and dependent variables are gathered at the same time.

Among the options described of the three quantitative research approaches, this study was designed as correlational research, as explained before. In addition to criteria naturally given by the research question as well as resources and the time available, there are a number of choices regarding the design that have been made in this study. Arguments for the choices that were made are presented in the following.

7.2.2 *Research Design - choices*

Firstly, in order to increase the understanding of antecedents and consequences of intrinsic work motivation in organizations, I have chosen to perform a *comparative study*. In a fundamental sense, all research implies some comparison (e.g. comparison before and after an event, or results being compared to normative theory). Arguments for contrasting profit and nonprofit organizations are due to attaining variation over the variables in focus and due to study intrinsic motivation in organizations with different levels of external motivators. Whether these organizations actually represent variation in the variables of interest is a question of empirical character. Contrasting profit and nonprofit organizations offers an opportunity to critically examine the issue of universality of the theories that are used in this research.

Secondly, I have chosen to do a *two step study*. To begin with, qualitative data are collected in an extended pilot study. Together with existing theory, the pilot study is used in order to build propositions and hypotheses. Then, in the quantitative approach, the proposed hypotheses are tested. Arguments for the choice of making an extended qualitative pilot study are outlined in the following.

In the motivation literature and the nonprofit literature, research that specifically refers to motivation in non-profit organizations remains limited. Therefore, an open question to the researcher is whether the established motivation theories in this study are valid for employees in nonprofit organizations as well. It might be possible that variables not included in existing theory will account for a large amount of the independent variance in employees' intrinsic motivation in the nonprofit sector. The lack of knowledge of the phenomena of motivation among employees in non-profit organizations indicates the need for an emphasis that is not rigorously examined or measured in terms of quantity, amount or frequency. In order to be able to discover possible new or relevant factors to be included in the survey, the qualitative study is of importance. This is the rational behind choosing an extended qualitative pilot study. These arguments are consistent with Grimen (2003, pp. 212-213). The extended pilot study includes both a profit and a non-profit organization that operate within the same field.

Further choices that have been made in this study include selection of organizations, which is described in Chapter 7.3 (empirical setting) as well as choices in connection to data collection (Chapter 7.4).

7.3 Empirical Setting

The research was carried out in one profit and one nonprofit organization within the health sector in Norway. It is possible to view the two organizations selected as cases and therefore as a multiple case design. Another possibility is to view the research as a single case design and a study of the health sector. What is considered the case in this study? The research topic and the research questions given imply that the case is to identify antecedents and consequences of work motivation. The research *setting* is the health sector from which two types of organizations have been chosen.

In the following, arguments are given why both organizations in this study were chosen from the health sector. When choosing which organizations to study, several dimensions can serve as selection criteria depending on the purpose of the study. In order to test the theories, internal validity and statistical conclusion validity have priority over external validity. This implies the importance of having a sample that has variation on the variables in focus, and that the sample is as homogenous as possible for other non-relevant factors (Calder, Phillips, & Tybout, 1981). In order to obtain a sample that is homogenous for non-theoretical variables, both organizations in this study operate within the health sector in Norway. This is the rationale behind choosing organizations operating within the same field. By choosing the health sector and hospitals as the empirical setting, a relatively controlled correlational design has been obtained, as non-theoretical variables such as education and profession (i.e. doctors, nurses and biomedical engineer) are as homogenous as possible in the two organizations.

The next step was to choose two organizations among the hospitals in Norway. What dimensions serve as selection criteria in this study? Randomization is not always a goal. Eisenhardt (1989) states that, although “cases may be chosen randomly, random selection is neither necessary nor even preferable” (p. 537). Organizations in this study are primarily selected on the bases of a *strategic sample*: 1) ensuring variation within the variables of interest and 2) ensuring as high degree of similarity as possible over non-relevant factors between the two organizations. The latter was captured by selecting departments with as identical activities as possible in the two organizations. The first criteria was ensured by selecting a profit and a nonprofit organization that are as different as possible in terms of initial purpose and ideology, considering it more likely that such differences may represent variation in the variables of interest.

The profit institution chosen offers both hospital services as well as polyclinic services. The latter services are offered in different parts of Norway, although most of the activity is concentrated in the city where the hospital is placed. Profit-based hospitals in Norway are smaller than hospitals in the nonprofit and public sectors. In order to obtain a satisfactory sample size in each organization, all employees in the profit organization chosen were selected as respondents in this research. The sample therefore includes different types of professions and positions. (See Appendix A for an overview and distribution of the professions in the two organizations). It could be argued that looking at only one profession (e.g. nurses) in the two organizations could help to ensure an even higher degree of similarity over non-theoretical variables in the two organizations. However, as long as the distribution of positions in the two organizations is similar, it is argued that there are no specific advantages of choosing the one over the other alternative. Apart from the amount of nurses versus licensed practical nurses in the two organizations, Appendix A shows that the distribution of each type of the other four positions is similar in both organizations.

Another aspect, which is of importance in this comparative study, is to make sure that as nearly identical activities as possible are chosen in the two organizations. The profit organization is the smallest in terms of number of employees. Therefore, activities in the profit organization chosen serve as the starting point when choosing what departments to study in the nonprofit organization. It is not of importance to attain a similar number of respondents in the two organizations. On the other hand, it is not necessary to include all employees in the nonprofit organization, which is lot bigger than the profit organization in terms of employees.

What is considered important in this study is comparing matching activities as well as obtaining a satisfactory sample size (the latter is discussed in Section 7.4.4). This means that variables such as sex and age were not taken into account when choosing departments in the nonprofit organization. As the profit organization mainly offers surgery activities at both the hospital and the polyclinic offices (including plastic surgery), the *surgery department* in the nonprofit hospital was chosen. Although different types of surgeries are emphasized in the two organizations, planned surgery activities (as opposed to acute hospitalization) are common factors in both organizations. With regard to matching similar activities, the surgery polyclinic at the nonprofit hospital is considered the closest matching activity to the profit

organization. Within the surgery department of the nonprofit institution, the following sub-departments are included: polyclinic, day-surgery, operation, supervise/monitor and bed-ward. In order to attain matching activities in the two organizations, the department for laboratory, x-ray and physical therapy in the nonprofit organization is also included. All employees in the departments mentioned are included in the survey. In addition, physicians from the medical department as well as the surgery department are included as respondents in order to attain a sufficient amount of doctors in the nonprofit organization.

A high degree of similarity over non-relevant factors between the two organizations is demonstrated above. Although the activities in the two organizations at a more detailed level are not identical, I argue that these differences are acceptable in this particular study.

7.4 Data Collection Procedure

A multimethod approach is used for data collection in this study (Section 7.4.1). Issues regarding data collection through interview (7.4.2) and survey (7.4.3) are described and discussed followed by considerations of appropriate sample size (7.4.4).

7.4.1 *Data triangulation*

Collecting data and information from different perspectives and viewpoints is a growing tradition in the social sciences, and has been described using terms such as triangulation (Yin, 2003). The use of triangulation or multimethod approaches is not new and can be traced back to Campbell and Fiske (1959) who argued that to ensure validation one should use more than one method. Campbell and Fiske's (1959) multimethod/multitrait methods are associated with the use of multiple methods to improve validation, e.g., by using two or more methods in order to measure one trait, claiming that the different measures should highly correlate (convergent principle). Triangulation refers to "a combination of methods in the study of the same phenomenon" (Cunningham, 1997, p. 415). There can be a triangulation between methods or within methods. "Between methods" triangulation involves the use of distinct and different research methods, as in this study where interviews are combined with a survey. "Within method" comparisons on the other hand are the use of multiple techniques within a given method to collect and interpret data, e.g. using multiple scales for the same concept. The various triangulation designs are based on the assumption that weaknesses of one method or perspective can be strengthened by the counterbalancing strength of another.

One type of data triangulation is used as the methodological approach in this research by combining qualitative and quantitative data sources. The main advantage of triangulation is that it may produce a more complete and holistic portrait of the object that is studied. However, there are some problems with triangulation, it can be difficult to judge whether the results from different methods are consistent or not. A second problem occurs if the different methods come up with contradictory results. Ghauri and Grønhaug (2002, p.182) conclude that triangulation can be useful even if the results are different. The argumentation is that it can lead to a better understanding or to new questions that can be answered by later research. The latter mentioned challenge will not occur in this research since the two methods for data collection are not independent of each other; the second data collection (survey) in this study is built upon the first qualitative pilot study (interviews).

Both of the data sources in this study are primary data. Data were collected in two ways: i) interviews followed by ii) survey, which are described in the following.

7.4.2 Interview

Interview is the most widely used qualitative method in organizational research (King, 1994). The aim of the interviews in this study was to investigate and search for additional factors of importance for intrinsic motivation in the profit and nonprofit sectors. In this way, it would be possible to add new variables to the survey that are not covered by existing theory. The use of informants has been a common technique when collecting data of interest for organization researchers. The technique relies on one or a few individuals with knowledge about the phenomena of interest.

The selection of informants is made on the basis of their unique knowledge of and their ability to describe the phenomenon. Campbell's (1955) classic criteria for choosing informants are often relied upon; one should select individuals that are knowledgeable about the phenomena at focus and able and willing to communicate about them. The use of informants means to ask "the person contacted to act in an informant role" (Seidler, 1974, p. 817). People taking the informant role often focus on structural patterns, based on observed or expected organizational relations. When using the key informant technique as described, the characteristics of the phenomena reported by the informant exist independently of the organization member. In this research, the respondents provide information about themselves

(e.g. work motivation, turnover intention), and the information does not exist independently of the individual reporting. I therefore see it as important to search for information in which different dimensions are represented.

Based on the above argument, the selection of respondents in each organization was based on the following criteria:

- One nurse, one physician, one licensed practical nurse and one leader are represented in the sample.
- Both genders are interviewed.
- One newly employed and one person who was employed for more than five years are represented in the sample.

These criteria were selected due to the fact that they may represent different dimensions influencing work motivation. In order to satisfy all criteria, five employees in each organization were chosen as a sufficient number of informants. The criteria were passed on to the contact person in each organization. In this way, the participants were contacted and recruited through their own organization. Then, the names of people who were attending an interview were given to the researcher. A letter with an interview guide was given to each participant in advance.

Interviewing has a wide variety of forms. The most common type is the individual, face-to-face verbal interchange, but it can also take the form of a face-to-face group interview or telephone surveys (Fontana & Frey, 1994). Group interviewing has been associated with marketing research, where the 'focus groups' has been used to gather consumer opinions on different products. Group interviews as well as individual interviews can be used for a variety of purposes: exploratory purpose, pre-testing questionnaire wording, triangulation or phenomenological purposes. In this study, individual interviews were chosen. I argue that individual interviews are appropriate in this research where a focus on the individual's motivation, performance, and turnover intention is central.

Interviews can be structured, semi-structured or unstructured. Whereas structured interviewing refers to a situation in which the interviewer asks a series of pre-established questions with a limited set of response categories and generally little room for variation, the

unstructured interviewing provides a greater breadth in terms of its open ended (in depth) character (Fontana & Frey, 1994). In between are the semi-structured or structured open-response interviews. In the latter, questions are open ended, and there is flexibility to allow variation in the order in which groups of questions are asked. Since the purpose of the qualitative phase of this study was to collect valuable additional information about intrinsic motivation in profit and nonprofit sector, the structured open-response interview was the method chosen. On the other hand, the structural interview is more appropriate where testing of formal hypotheses is desired and where data can be quantified. An unstructured interview would be too open, since the conversation in this study is directed towards specific topics.

The interview guide contained questions such as: “How would a meaningful day at work for you look like? Could you describe using examples when you like/dislike your job? Why did you apply for your current job? What would be the reason to quit this job?” The questions were not necessarily followed in order. The guide was used as a checklist of themes to bring up as the conversations went on. The interviews also allowed additional themes to appear during the conversation. Each interview was about one hour. Important factors in successful qualitative interviewing are being flexible, empathic and a good listener (Fontana & Frey, 1994). As a researcher, I had these aspects in mind when meeting and talking to the participants.

The five participants representing the nonprofit sector were chosen from another nonprofit hospital than where the survey was conducted. The informants were chosen from the surgery department at “Nonprofit hospital 1”, and the survey was conducted at “Nonprofit hospital 2” (the latter described in Chapter 7.3). The interviews and survey in the nonprofit sector was conducted at two different organizations. Testing of hypotheses at Nonprofit hospital 2, which are based on interviews in Nonprofit hospital 1, strengthen the external validity of this study. In addition, by conducting the survey at another nonprofit hospital than where the interviews were conducted, the researcher interestingly saved time which was of importance in this study. Unfortunately, the opposite situation was the case for the profit sector, which resulted in the fact that both interviews and survey were conducted in the same profit organization.

7.4.3 *Survey*

The questionnaire was prepared by gathering established measurement scales for the variables of interest. If validated scales in Norwegian were not available, English versions of the scales of interest were translated by the procedure described in Chapter 7.5.

With regard to presenting items intended to measure a number of different variables in the questionnaire, there are two distinct ways to carry it out: full randomization of items versus thematic blocks of items. In this regard, there are two opposing concerns. On the one hand, questions within a theme are more relevant to each other and may be more subject to mutual influence. This is an argument for full randomization. On the other hand, full randomization of the items may result in a strange mix of unrelated themes that can violate normal conversational conduct and might even make the respondent try to see relationships that were never intended. I am not aware of any systematic test of the two strategies, but the two concerns mentioned are the basis for choosing a strategy ‘in between.’ The items in this study are therefore randomized within thematic blocks. The order of the blocks is chosen in a way so that possible ‘carry-over’ between blocks can be captured. In this way, order effects are reduced without hurting the flow of “conversation.”

The questionnaire was pre-tested by three health-workers from public and nonprofit hospitals: one nurse (female), one doctor (male) and one occupational therapist (female). Each person was asked to fill out the questionnaire, and to write down comments and thoughts while filling out the survey. Thereafter followed a conversation with me, and every page was gone through, comments and opinions were received. It took about 30 minutes to fill out the questionnaire. Based on the pre-tests, some changes were done before the survey was sent out to the organizations selected.

The questionnaires were sent to the respondents’ working place from the research department where I was located. (Chapter 7.3 describes and discusses the issue of selection of respondents). Each envelope contained an information letter from the research department, signed the project leader (professor) and myself. A general recommendation letter from the top management team of the organization was also attached. The recommendation letter from the organizations was sent to the research department in advance. In this way, the respondent’s own institution (leading-team) was supporting the project without having any access to the data. A prepaid envelope was attached to each questionnaire: the data were in

this way returned directly to the research department. It was stated in the information letter that participation in the project was voluntary. For those who did not want to participate, it was possible to make some comments on the first page of the questionnaire about why participation was not wanted. In this way, some information about part of the sample that did not participate could be available. Information about the research project was given to the respondents before they received the questionnaire. Reminders for those who did not reply were given twice.

7.4.4 Sample size and unit of analysis

Although there is “no hard and fast rule” to determine the appropriate sample size of a study, Bollen (1989) suggests to have “at least several cases per free parameter” (p. 268). Hair, Anderson, Tatham and Black (1998, pp. 98-99) have suggested a rule-of-thumb regarding sample size and factor analysis where there are at least five times as many observations as there are variables to be analyzed. The more acceptable size would have a ten-to-one ratio. Following the minimum requirement gives a sample size of at least $5 * 39 = 195$. This was obtained for research questions one and two. Since research questions one and two were not dependent upon type of organization, sample size in these analyses is the total number of respondents of the two organizations. In research question three, the two organizations were compared, and sample sizes in the two organizations are therefore not summarized, but treated separately. One of the analysis techniques when answering research question three, is multigroup analysis by structural equation modeling (SEM). If using SEM with *latent* variables, the suggested minimum sample size of 195 (above) is about twice as much as what is present in each organization. Structural equation modeling with observed variables is therefore used in the SEM analyses.

7.5 Measurement

According to Bollen (1989, p. 180) there are four steps to follow regarding the measurement process: i) give meaning of the concept, ii) identify dimensions and latent variables to represent it, iii) form measures and iv) specify the relation between the measures and the latent variables. The first two steps were accomplished in the theoretical part. In the following, step three is presented. Step four is presented in Chapter 8.

How is it possible to *measure* factors influencing intrinsic motivation, as well as intrinsic motivation, performance and turnover intention? The quantitative part of this comparative study has made use of measurement scales that have already been profoundly tested.

Job autonomy is an independent variable in this study. The individual factor (autonomy orientation) is looked upon as either an independent variable (Hypothesis1-alternative a) or a moderator variable (Hypothesis1-alternative b). The social factor (relatedness at work) is looked upon as an independent variable (Hypothesis 2). Perceived competence and intrinsic work motivation are mediators in the model whereas performance and turnover intention are dependent variables. All items are on a 7-point Likert format ranging from 1 (strongly disagree) to 7 (strongly agree).

Measurement scales for the variables job autonomy, relatedness, perceived competence and autonomy orientation (General Causality Orientation Scale) were translated from English to Norwegian by the following procedure: Each measurement was translated into Norwegian by a professional English-Norwegian translator. An English back-translation of the translated measurements was done by an additional professional translator. The back-translation was compared with the original measurements by the author of this study, differences were noted, and final measurements were decided.

Job autonomy is defined as the degree to which the job provides freedom in scheduling the work and in determining the procedures to be used in carrying out the work (Hackman & Oldham, 1976). Job autonomy is measured from Hackman & Oldham's Job Diagnostic Survey (JDS) using a 7-point Likert-type scale (Hackman & Oldham, 1980).

Job autonomy

Jobaut1	How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own work?
Jobaut2	The job gives me considerable opportunity for independence and freedom in how I do the work.
Jobaut3	The job gives me a chance to use my personal initiative and judgment in carrying out the work.

Relatedness at work refers to personal contact with others at work and a sense of connectedness and belongingness to other people (Baumeister & Leary, 1995). Relatedness involves feelings of care and respect. The measurement scale from the Basic Need Satisfaction Scale at Work is used for measuring relatedness³. Unfortunately, one item was left out by mistake, meaning that seven items are included in the study.

Relatedness

Related1	I really like the people I work with.
Related2	I get along with people at work.
Related3	I pretty much keep to myself when I am at work (R)
Related4	I consider the people I work with to be my friends.
Related5	There are not many people at work that I am close to (R).
Related6	The people at work do not seem to like me much (R).
Related7	People at work are pretty friendly towards me.

(R) – reversed item.

Competence concerns people's feeling of effectance or efficacy (Deci & Ryan, 1985a; Ryan & Deci, 2000a). The concept of perceived competence is measured from the 4-item scale for learning⁴ which was adapted to a work setting.

Competence

Competence1	I am able to achieve my goals in this job.
Competence2	I feel confident in my ability to learn this material.
Competence3	I am capable of learning the material in this job.
Competence4	I feel able to meet the challenge of performing well in this work.

Autonomy orientation describes the general tendency for behavior to be initiated by events internal to one's self as well as the tendency to interpret events in the environment as informational (Deci & Ryan, 1985a, p. 153). The General Causality Orientation Scale⁵ (GCOS) is used to assess the individual difference variable of employees' autonomy orientation. This scale (Deci & Ryan, 1985a, 1985b) measures general orientations towards

³ The measurement scale is available at http://www.psych.rochester.edu/SDT/measures/needs_scl.html

⁴ The measurement scale is available at http://www.psych.rochester.edu/SDT/measures/comp_scl.html

⁵ The scale is available at <http://www.psych.rochester.edu/SDT/measures/caus.html>

being autonomous, controlled and amotivated (impersonal causation). GCOS consists of 12 hypothetical scenarios, and each scenario measures the likelihood of autonomous, controlled or impersonal motivational orientation (see Appendix B). Participants rate each response on a scale from 1 (very unlikely) to 7 (very likely). Scores are computed by averaging respondents' ratings across all 12 scenarios. Only the autonomous orientation was used in this study.

Intrinsic motivation refers to engaging in an activity for the satisfaction inherent in the activity. A truly intrinsically motivated person feels free from pressure, such as rewards or contingencies (Deci & Ryan, 1985a, p.29). Intrinsic motivation is a function of basic need satisfaction. Intrinsic *work* motivation concerns intrinsic motivation at work. Intrinsic motivation is a complex, invisible and hypothetical concept. Intrinsic motivation cannot be measured directly. Instead, the concept relies on established theories to guide in measuring the observable manifestations of intrinsic work motivation. Deciding how to meaningfully measure "intrinsic work motivation" is a considerable challenge in today's organizations. There are two types of measures that have been most commonly used. When doing an experiment, the so-called free-choice measure of intrinsic motivation is quite commonly used (Deci & Ryan, 1985a, p. 44). This involves observing behavior of participants during a free-choice period when interesting activities in addition to the original activity are available. The other common approach to the measurement of intrinsic motivation is the use of self-reports of interest and enjoyment of an activity. The latter is used in this study. The measurement scale of intrinsic work motivation used in this study is based on Kuvaas (2006a; 2006b), where commonly used descriptive adjectives are employed to assess intrinsic work motivation. The items are listed below. The items Intrinsic 2 and Intrinsic 3 in the present study stem from that research, but differs slightly from Kuvaas (2006a; 2006b). The items Intrinsic 2 and Intrinsic 3 from Kuvaas (2006a; 2006b) were replaced with items from Kuvaas (2005) because the former items loaded on a different factor.

Intrinsic1	My job is meaningful.
Intrinsic2	My job is very interesting.
Intrinsic3	Sometimes I find my work so exciting that I forget what is going on around me.
Intrinsic4	The tasks that I do at work are themselves representing a driving power in my job.

Intrinsic5	The tasks that I do at work are enjoyable.
Intrinsic6	My job is so interesting that it is a motivation in itself.

Strictly speaking, the item Intrinsic 1 does not represent the concept of intrinsic motivation the way it is defined, but rather in the type of identified regulation as described in Section 2.1.2 and Table 1. However, I chose not to exclude items from the validated scale, item Intrinsic 1 is therefore included in the study.

Performance at work concerns both effort and performance level and was assessed by a six item scale reported in Kuvaas (2006a; 2006b) that includes both levels of performance and effort. The items are listed below.

Performance1	I try to work as hard as possible.
Performance2	I often perform better than what can be expected.
Performance3	I often expend extra effort in carrying out my job.
Performance4	I intentionally expend a great deal of effort in carrying out my job.
Performance5	The quality of my work is top-notch.
Performance6	I almost always perform better than what can be characterized as acceptable performance.

Turnover intention is defined as the intent to leave an organization. The construct of turnover intention was assessed by a five item scale from Kuvaas (2006a). The items are listed below.

Turnover1	I often think about quitting my present job.
Turnover2	I will probably look for a new job within the next three years.
Turnover3	I may quit my present job next year.
Turnover4	I will probably look for a new job next year.
Turnover5	I do not see much prospects for the future in this organization.

7.6 Validity and Reliability

In order to ensure internal validity, it is important to focus on three components: Isolation, association and direction (Bollen, 1989). Isolation means that other influences than those included in the model are ruled out. Association means that there is covariation between the independent (cause) and dependent (effect) variable. Direction of influence means that the cause precedes the presumed effect in time. Of these three criteria, association is related to statistical conclusion validity, and isolation and directionality are most related to internal and construct validity.

The term *validity* is defined in Shadish, Cook and Campbell (2002, p.34) as “the approximate truth of an inference.” Validity is then a property of inferences and is not a property of designs or methods. The same design may contribute to more or less valid inferences under different circumstances.

The validity typology in Cook and Campbell (1979) is divided into four types which are relevant to discuss in this study. They are internal validity, statistical conclusion validity, construct validity and external validity. Ideally, a study would score high on the dimensions of all four forms of validity. Doing so in reality seems difficult, as increasing one kind of validity will probably decrease another kind. It is therefore of importance for a researcher to focus on scoring high on the types of validity that are prioritized, given the purpose of the study. As the purpose of this study is theory testing, a focus on internal validity and construct validity is prioritized, while at the same time keeping statistical conclusion validity sufficiently high. External validity is not the primary priority in this study. This compromise is generally accepted. According to Cook and Campbell (1979), external validity is of less importance: “In practice, it is often sacrificed for the greater statistical power that comes through having isolated settings, standardized procedures, and homogenous respondent populations” (p. 83).

Internal validity is concerned with the relationship between two variables: did x have an impact on y? Given that they covary, can it be claimed that there is any causal relationship between the two? Yin (2003) defines internal validity as “establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships” (p. 34). Statistical conclusion validity refers to whether covariation

can be assumed between two variables. Construct validity is related to whether a measure or set of measures correctly represents the concept of study. Types of construct validity are convergent validity and discriminant validity. Convergent validity is the degree to which two measures of the same concept are correlated. Discriminant validity refers to the degree to which two conceptually similar concepts are distinct. In other words, convergent validity confirms that the scale is correlated with other measures of the concept, and discriminant validity ensures that the scale is different from other similar concepts.

External validity refers to the generalizability of the results. The question of interest regarding external validity is “To what other groups, units, populations can these results be extended?” (Caporaso, 1995, p.460). Internal validity and statistical conclusion validity are related. Both types of validity are primarily concerned with the relationship between treatment and outcome. According to Cook and Campbell (1979, p.80), the status of statistical conclusion validity is a special case of internal validity. Construct validity and external validity are also related to each other in the way that both generalize.

It is often of concern how to know whether variation in the independent variable causes variation in the dependent variable. According to Shadish, Cook and Campbell (2002, p.6), a causal relationship exists if: i) the cause precedes the effect, ii) the cause is related to the effect and iii) no other plausible explanation is found. Bollen (1989) respectively focuses on the three components; direction, association and isolation. Direction of influence means that the cause precedes the effect with respect to time. Association means that there is covariation between the cause and effect. Isolation is referred to as no other influences are present except those included in the study are present. As explained in Chapter 7.2, the correlation design seems to be the weakest design available for testing causal models. There is an old saying that correlation does not prove causation. The reason for the statement is that correlational design does not enable the researcher to meet the criterion of directionality of influence. In addition, the correlational design provides relatively weak abilities to establish isolation compared to the experimental design. The researcher is left with establishing associations rather than causation. However, one may strengthen the directionality argument on theoretical and logical grounds. Some a priori knowledge may also assume time order of variables.

Reliability is a necessary condition for validity. Reliability refers to the stability of the measure and is the amount of true variance of a questionnaire or test. Reliability concerns the

consistency of measurement (Crocker & Algina, 1986). The number of items would typically influence the reliability. Whereas validity is concerned with how well a concept is defined by the measure (construct validity), reliability is related to the consistency of the measure. Cronbach's alpha is a widely used reliability coefficient that assesses the consistency of an entire scale. One issue regarding Cronbach's alpha is its positive relationship to the number of items in the scale. Thus, increasing the number of items will generally increase the reliability value. Hence, the researcher may place stricter requirements on scales with a large number of items.

Reliability of a study also has to do with whether or not another researcher would arrive at the same conclusions when following the same procedures. It is of importance to describe how the conclusions have been reached in order for others to, if not replicate, at least assess the reliability of the research.

7.7 Ethical considerations

Ethical considerations in this study are related to i) data collection, ii) analyses and iii) the writing process. Regarding data collection (i), when conducting interviews in phase 1, it is important to ensure that the participants' point of view is reflected in the most accurate way possible. It is also of importance to ensure anonymity for each participant who is interviewed as well as each respondent of the survey. Information to participants about the process of how data are treated and how anonymity is secured is emphasized in the project. Regarding the interviews, anonymity and professional secrecy were ensured by providing very limited information about the participants, and hence quotations, attitudes and opinions cannot be traced back to the individuals participating in the study. Regarding the survey, anonymity was secured by presenting statistical results. The project was reported to The Privacy Issue Unit at the Norwegian Social Science Data Services (Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste A/S). As patients are not involved in this study (only employees in hospitals), application to the Regional Committee for Medical Research Ethics was not conducted.

Regarding (ii), analyses in this study are mainly related to statistical approaches. The rationale for each statistical step is described as thoroughly as possible. Statistical analyses and choices connected to the analyses are theoretically driven. This means, when theory and good

statistics were incompatible (e.g., when doing factor analysis), the choices were based on theory, resulting in weaker statistical results. This is explicitly explained in the text. Regarding the writing process (iii), making sure that what is included in the thesis really represents the respondents' view is ethically important towards both the respondents and the readers of the study.

7.8 Summary

Table 4 gives a summary of Chapter 7. As the aim of this study is test of theories, the quantitative approach is emphasized in this study. Multiple alternative hypotheses are proposed. The chosen research strategy was based on the research question, which resulted in a qualitative pilot study followed by a survey. The latter forms a non-experimental (correlational) design. The research setting is the health sector where one profit and one nonprofit institution were compared. Qualitative and quantitative approaches were combined, primary data were used, as well as established measurement scales. Internal validity was given priority over external validity.

Table 4. Summary of methodological foundation of the study.

Perspectives	Applied in current study
Aim of study	Theory testing
Scientific inquiry	Multiple alternative hypotheses
Research strategy	Combining qualitative and quantitative approaches (triangulation)
Research design	Phase 1: Qualitative interviews Phase 2: Correlational design
Empirical setting	Health sector
Comparison	Profit and nonprofit organizations
Data source	Primary
Data collection	Phase 1: Semi-structured interviews Phase 2: Survey
Measurements	Established measurement scales
Validity	Internal validity is given primary priority

PART IV

8. RESULTS

The purpose of this chapter is to test the proposed hypotheses. Results are presented in the following order: Data description (8.1), Screening of data (8.2), Factor analyses (8.3), Assumptions and correlations (8.4), Results research question 1 (8.5), Results research question 2 (8.6) and Results research question 3 (8.7). A summary of the results is given in Chapter 8.8.

8.1 Data description

General information of the sample is given in Table 5. The total sample consists of 261 respondents, 155 of the participants are employed in the nonprofit organization, and 106 in the profit organization. The majority of the respondents are females (79.7%). Sixty-two percent of the sample was employed full-time.

Table 5. General information of the sample.

	Full sample of respondents	Nonprofit organization	Profit organization
Number of respondents	261	155	106
Response rate	49.0%	49.7%	48.0%
Female respondents from the sample	79.7%	82.9%	77.4%
Respondents with full time position (100 % position)	62.0%	64.9%	57.7%
Respondents with part time position (50 – 99 % position)	33.3%	33.8%	32.7%
Respondents with small position (less than 50 %)	4.7%	1.3%	9.6%

The response rate in this study was 49 %. Baruch (1999) compared response rates over time that were reported in six journals within management and behavioral sciences: Academy of Management Journal, Human Relations, Journal and Applied Psychology, Human Decision Processes, Journal of International Business Studies and Organizational Behavior. He found

that average response rates declined over time; from 64 percent in 1975, 56 percent in 1985 to 48 percent in 1995. Standard deviations (SD) were respectively 17, 19 and 23. According to Baruch (1999), the norm should be within 1 SD from the average and the suggested guideline for organizations are response rates about 60 +/- 20. Any deviation from this norm, especially downward, should be explained (ibid).

Although this study satisfies the guidelines indicated, some comments are made. With regard to gender, age, education and type of position, Table 6 and Appendix A indicate that the distribution seem similar in the two organizations. A concern of greater interest regarding the response rate is the question of who did not respond and participate in the project, and hence, possible biases in the sample. Of those who did not want to participate, 23 employees returned the questionnaire, in which 13 provided comments for not wanting to participate. Reasons for not wanting to take part were mainly 'no time available.' Other reasons were: 'irrelevant questions,' due to 'anonymity concerns' and 'just started working in the organization.' Since a relatively small number of non-participants returned the questionnaire, indications of whether the respondents were different from the nonrespondents are not commented upon in greater detail.

Ensuring sufficient response rate is not considered as the most important aspect in this study. Since this research investigates and tests relationships between variables, the primary concern is to ensure sufficient *variation* in the variables to be studied. Appendix C shows the standard deviation for each item in the study, indicating that the variances are generally satisfactory.

Demographic information for the sample is presented in Table 6. The number of years in the current institution is significantly different in the two organizations, showing that mean of years in current organization is significantly higher in the nonprofit organization. Bonferroni inequality adjusts the alpha level for the number of tests being made. The adjusted alpha level is defined as overall alpha level divided by number of tests (Hair, Black, Babin, Anderson, & Tatham, 2006, p. 424).

Table 6. Demographic information of the sample.

	N	<i>Full sample of respondents</i>		<i>Nonprofit organization</i>			<i>Profit organization</i>			<i>T-test</i>
		Mean	SD	N	Mean	SD	N	Mean	SD	
Age	259	44.5	10.8	154	43.4	11.0	105	46.2	10.4	-2.2
Education level (1 – 4)	261	2.46	1.1	155	2.54	0.94	106	2.34	1.2	1.7
Number of years in current organization	257	8.01	7.1	153	9.2	7.9	104	6.27	5.1	3.4*

* $p < .05$ Note: Bonferroni's adjustment lowers the alpha for each test to .017 (.05/3 = .017)

8.2 Screening of data

Prior to the analyses, a screening of data was done. The accuracy of data was checked, first by randomly going through 10% of the questionnaires that were manually punched: minor changes were done. Secondly, unidimensional outliers were checked through frequency tables of all items in the whole sample. Unidimensional outliers are cases with an extreme value on one variable. Few but important changes were done (e.g., value corrected from 55 to 5). Multidimensional outliers are cases with an unusual combination of scores on two or more variables. Multidimensional outliers were explored; none of the cases was deleted based on multidimensional outliers.

Data are missing from the General Causality Orientation Scale (GCOS). Some respondents misunderstood the guidelines for filling out these items. For each hypothetical scenario, the respondents were meant to fill out three possibilities, which measured the likelihood of being autonomous, controlled and impersonal. Among all respondents, 14 employees in the profit organization and 15 employees from the nonprofit organization filled in only one possibility per scenario. Those cases will not yield any meaning when computing autonomy orientation by averaging respondents' ratings across all 12 scenarios. Therefore, 29 cases were deleted when doing analyses where autonomy orientation was present.

8.3 Factor analyses

The starting point in factor analyses is the research problem. The general purpose of factor analyses is to search for and define constructs or dimensions that are assumed to underlie the original variables, and to find a way to summarize information that is contained in a number

of original variables into a smaller set of new dimensions (Hair et al., 1998, p. 95). As the measurement scales for job autonomy, relatedness at work, perceived competence and autonomy orientation (General Causality Orientation Scale) were translated from English to Norwegian, a traditional component analysis was done separately for each of these variables. Job autonomy and relatedness showed satisfactory convergent validity. The constructs of perceived competence and autonomy orientation are commented upon in the following.

Regarding perceived competence, all items loaded on one factor, with an eigenvalue 2.43 that explained 60.72% of variance extracted. However, the factor score for Competence 1 was as shown in Table 7 very low. The reason might be due to the translation of the item.

Table 7. Factor analysis – perceived competence.

	Component
Competence1	.30
Competence2	.87
Competence3	.93
Competence4	.85
Initial eigenvalues	2.43
% of variance extracted	60.72
Cronbach's alpha	.69

An important comment has to be made concerning the item Competence 1. Deletion of Competence 1 would yield higher reliability and discriminant validity. Zero-order-correlation between perceived competence and intrinsic motivation was significant in both cases, but lower when Competence 1 was deleted. The reason for this might be that the item was loading on intrinsic motivation. In any case, the item Competence 1 is theoretically an important aspect of perceived competence and theoretically different from intrinsic motivation. The item Competence 1 therefore remained in the further analyses. Regarding Cronbach's alpha, although values down to .60 can be deemed acceptable, the general lower limit for Cronbach's alpha is .70 (Hair et al., 1998, p. 118). Cronbach's alpha of .69 is regarded as satisfactory.

Table 8. Factor analysis – independent variables and mediator variables.

	Component			
	1	2	3	4
Jobaut1				.80
Jobaut2				.86
Jobaut3	.42			.64
Competence1	.44			.44
Competence2			.87	
Competence3			.92	
Competence4			.76	
Related1		.74		
Related2		.74		
Related3		.54		
Related4		.71		
Related5		.62		
Related6		.56		.31
Related7		.63		
Intrinsic1	.57			
Intrinsic2	.78			
Intrinsic3	.69			
Intrinsic4	.78			
Intrinsic5	.82			
Intrinsic6	.84			
Initial eigenvalues	6.07	3.22	1.80	1.24
% of variance extracted	30.36	16.08	9.00	6.02
Cronbach's alpha	.88	.77	.69	.81

In order to test the measurement model of job autonomy, relatedness, perceived competence, and intrinsic motivation, a traditional component analysis using VARIMAX rotation was conducted, see Table 8. As the instruments have been applied and validated in previous research, a predefined four-factor solution was chosen instead of extraction of factors with eigenvalues equal to or greater than one. The option 'delete cases pairwise' was chosen. Factor loadings below .3 are not shown. The whole sample is used in the factor analysis.

However, factor analysis for each organization was conducted separately afterwards, in order to check and confirm that approximately same results were given.

The independent and dependent variables are analyzed separately. This division was made in order to determine the extent to which the conceptually separate measures were empirically independent from each other, and hence, that they would independently relate to the dependent variables. As Table 8 shows, perceived competence and intrinsic motivation are included in the measurement model together with the independent variables. However they could also have been analyzed in a separate factor analysis. Regarding rotation, orthogonal and oblique rotational techniques are choices in which VARIMAX and OBLIMIN rotation respectively were chosen in the computer program SPSS. Oblique and orthogonal are similar rotations except that oblique rotations allow for correlations between factors instead of maintaining independence between the rotated factors. Additional care may be given to obliquely rotated factors as they have a way of becoming specific to the sample and not generalizable. In particular this is valid with small samples or low cases-to-variable ratio (Hair et al., 1998, p. 110). In addition it is argued that there is no analytical reason to favor one rotational method over another (ibid.). Based on the description above, VARIMAX rotation was chosen.

Whereas discriminant validity concerns the extent to which measures of different constructs are empirically and theoretically distinguishable, convergent validity refers to the extent to which different measures of the same construct converge on the intended construct or ‘hold together’ (Mathieu & Taylor, 2006). Inspection of Table 8 shows that convergent validity and discriminant validity are satisfactory except for Competence 1 and Jobaut 3. The latter represents an important aspect of autonomy at work and has not been deleted (like arguments for remaining Competence 1). I regard construct validity to be satisfactory given the underlying theory.

Table 9. Factor analysis – autonomy orientation.

	Component
	1
Autonomy1	.61
Autonomy3	.58
Autonomy5	.61
Autonomy6	.54
Autonomy7	.48
Autonomy8	.59
Autonomy9	.69
Autonomy10	.54
Initial eigenvalues	2.72
% of variance extracted	33.96
Cronbach's alpha	.72

With regard to autonomy orientation, 29 cases were deleted prior to the factor analysis (see explanation Chapter 8.2). Since the scale was translated, exploratory analysis was chosen. The construct of autonomy orientation loaded on three different factors. Based on inspection of the factor loadings, Autonomy 2, Autonomy 4, Autonomy 11 and Autonomy 12 were deleted due to low loadings on autonomy orientation and high loadings on other factors. Two of the deleted items (Autonomy 2 and Autonomy 4) were also high on kurtosis, see Appendix C. The remaining items are shown in Table 9, which is the final measurement model for autonomy orientation.

It might be argued that deletion of items from an established scale is questionable. The main argument that justifies the deletion of items, is the challenge that appears due to translation of the items. For example, two items of the translated version loaded on control orientation, which will make further analyses both unclear and inconsistent. A satisfactory measurement model is an important requirement for the further analyses.

Table 10. Factor analysis – dependent variables.

	Component	
	1	2
Performance1		.63
Performance2		.64
Performance3		.77
Performance4	-.24	.67
Performance5		.64
Performance6		.63
Turnover1	.84	
Turnover2	.86	
Turnover3	.84	
Turnover4	.89	
Turnover5	.74	
Initial eigenvalues	3.79	2.51
% of variance extracted	34.47	22.79
Cronbach's alpha	.895	.74

In order to test the measurement model of the dependent variables, component analysis using VARIMAX rotation was conducted, see Table 10. A predefined two-factor solution was chosen as the instruments have been applied and validated in previous research. Pairways deletion of cases was chosen. Factor loadings below .3 are not shown. The whole sample is used in the factor analysis. Factor analysis for each organization was also conducted separately, to check and confirm that same results were given.

The construct of performance loaded on two different factors when doing exploratory factor analysis. The items Performance 2 and Performance 6 represent an expected standard of the performance, which is probably why these two items load high on another factor as well (see measurements Chapter 7.5 and Appendix D). The validated performance scale used in this study includes both effort and performance: the scale is maintained with all six items, as used in previous studies (Kuvaas, 2006a, 2006b).

8.4 Assumptions and Correlations

Assumptions of normality are described in Section 8.4.1 and correlations among the variables are presented in Section 8.4.2.

8.4.1 Normality

Normality is the assumption that all variables and all linear combinations of the variables are normally distributed.

Table 11. Descriptive statistics of the sample.

Variable	N	Mean	St.dev.	Skewness	Kurtosis
Job autonomy	257	5.03	1.37	-.72	.24
Relatedness	259	5.78	.82	-.81	1.09
Autonomy orientation	230	5.80	.70	-.21	-.38
Perceived competence	256	6.19	.67	-1.16	2.97
Intrinsic motivation	249	5.14	1.08	-.72	.56
Performance	252	5.32	.81	-.16	.01
Turnover	257	2.70	1.64	.80	-.38

When the assumption of normality is met, the residuals of analysis are also normally distributed. The descriptive statistics of the data are reported in Table 11. Skewness measures the balance of the distribution. If a distribution is unbalanced, it is skewed. A positive skew reflects a shift to the left. A negative skew denotes a distribution to the right. Kurtosis reflects the peakedness or flatness of the distribution compared with the normal distribution. Skewness and kurtosis of a normal distribution are given the value zero. By applying the most commonly used critical values ± 2.58 or ± 1.96 with significance levels at .01 or .05 respectively, the data do not seem to suffer from non-normality (Hair et al., 2006, p. 82) with one exception. The variable perceived competence seems to suffer slightly from kurtosis (2.97), which indicates a slight peakedness of the distribution. As the value exceeds the specified critical values only to a small extent, data transformations are not made. At the item level, some data seem to suffer from kurtosis (e.g. Related 2, Related 7, Competence 2, Competence 3, and Performance 5, see Appendix C). Overall, since skewness is satisfactory at the item level and since skewness and kurtosis show satisfying values at the construct level, data do not seem to suffer from non-normality.

8.4.2 Correlations among the variables

Possible collinearity was checked for by inspection of the correlation matrix in Table 12.

The control variable age is not significantly correlated to intrinsic motivation or performance, but correlates negatively with turnover intention. The variable education level is significantly correlated with job autonomy. High education level would yield low level of control. Education level is not correlated with the dependent variables performance and turnover intention, and only to a minor extent with intrinsic motivation. The control variable ‘years in current organization’ does not correlate with intrinsic motivation or performance, and only to a minor degree with turnover intention. Therefore, the further analyses do not control for age, education or number of years in current education.

Table 12. Correlation matrix.

	1	2	3	4	5	6	7	8	9
1. Job autonomy	1								
2. Autonomy orient.	.13	1							
3. Relatedness at work	.12	.34**	1						
4. Per. Competence	.36**	.45**	.299**	1					
5. Intrinsic mot.	.597**	.25**	.19**	.38**	1				
6. Performance	.36*	.24**	.12	.40**	.48**	1			
7. Turnover intention	-.29**	-.06	-.23**	-.19**	-.37**	-.11	1		
8. Age	.067	-.06	.041	.057	-.091	.092	-.22**	1	
9. Education level	.34**	-.14*	-.17**	-.035	.14*	-.086	-.037	.084	1
10. Years in current org.	-.011	.016	.039	-.058	-.083	.016	-.16*	.46**	-.19**

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

8.5 Results research question 1

Research question 1: How are job factors, social factors and individual factors related to intrinsic work motivation?

Additive effect: Hypothesis 1 - alternative a): *Job autonomy and autonomous causality orientation account for independent variance in employees' intrinsic work motivation.*

Table 13 shows that standardized beta-coefficients of both job autonomy (.575) and autonomy orientation (.178) are significant at $p < .01$. Both job autonomy and autonomy orientation contribute with unique variance to intrinsic work motivation. The hypothesis is supported. R square (.388) indicates the percentage of total variation explained by the regression model.

Table 13. Test of hypothesis 1 – alternative a).

	Intrinsic motivation
Job autonomy	.575***
Autonomy orientation	.178**
R square	.388

Standardized regression coefficients are shown.

* $p < .05$. ** $p < .01$. *** $p < .001$

Moderator effect: Hypothesis 1 – alternative b): *The relationship between job autonomy and intrinsic motivation is moderated by autonomous causality orientation.* See Figure 3 for visualization of the hypothesis.

In order to test the moderation hypothesis, an hierarchical moderated regression was applied (Cohen, Cohen, West, & Aiken, 2003, Ch. 7). The first step is shown in Table 13, the second step is shown in Table 14. As interaction terms may create multicollinearity due to their correlations with the main effect, the independent variables job autonomy and autonomy orientation were centered. Hence, the interaction term was computed by multiplying the two centered variables.

Table 14. Test of hypothesis 1 – alternative b)

	Intrinsic motivation
Job autonomy (centered)	.575***
Autonomy orientation (centered)	.187**
Job autonomy X Autonomy orient	-.077
R square	.394

Standardized regression coefficients are shown.

*p<.05. **p<.01. ***p<.001

The standardized beta-coefficient of the interaction term is close to zero and is not significant, which indicates that Hypothesis 1 – alternative b) was not supported⁶.

Hypothesis 2: *Job autonomy and relatedness at work will account for independent variance in employees' intrinsic work motivation.*

Standardized beta-coefficients of job autonomy (.560) and relatedness (.162) are significant at $p < .01$. ($R^2=.362$). This is shown in Table 15. Both job autonomy and relatedness at work contribute with unique variance to intrinsic work motivation. The hypothesis is supported.

Table 15. Test of hypothesis 2.

	Intrinsic motivation
Job autonomy	.560***
Relatedness	.162**
R square	.362

Standardized regression coefficients are shown.

*p<.05. **p<.01. ***p<.001

⁶ Analyses where autonomy and controlled orientation were treated as a dichotomous variable provided similar results: hypothesis 1 alternative b) was not supported.

Hypothesis 3: *The relationship between autonomy orientation and intrinsic motivation is mediated by perceived competence.*

The procedure recommended by Baron and Kenny (1986) was used to test the mediation hypotheses. According to them, the following three conditions must be met in order to support a mediating relationship: 1) the independent variable is significantly associated with the mediator, 2) the mediator variable is significantly related to the dependent variable, and 3) when the mediator is entered in the regression model, the significant relationship between the independent and dependent variable will disappear (full mediation) or significantly diminish (partial mediation).

Regarding autonomy orientation as a mediator between job content and intrinsic motivation, all three conditions by Baron and Kenny (1986) are met.

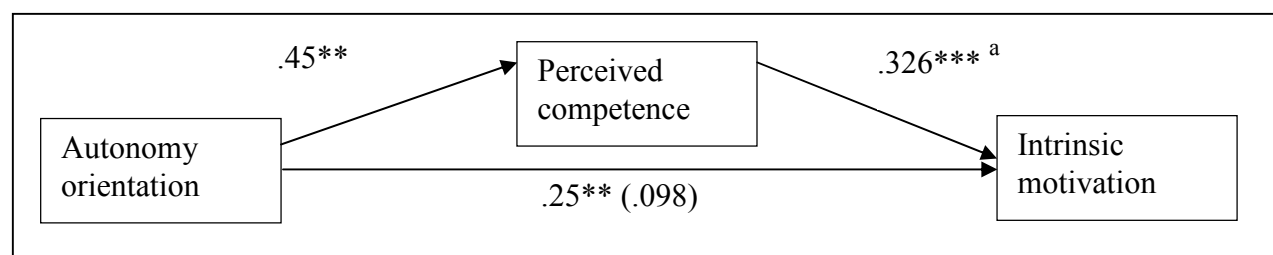


Figure 8. Mediation effect – Hypotheses 3.

Notes: Standardized beta-coefficients are shown. Number in parenthesis shows the path when perceived competence is entered in the regression model.

^acontrolled for Autonomy orientation.

* $p < .05$, ** $p < .01$, *** $p < .001$

The two first conditions are shown in Figure 8. Regarding the third condition, the relationship between autonomy orientation and intrinsic motivation disappeared with a nonsignificant standardized betacoefficient of .098 when perceived competence was entered in the regression model, see Table 16.

Table 16. Test of hypothesis 3.

	Intrinsic motivation
Perceived comp.	.326***
Autonomy orient.	.098
R square	.146

Standardized regression coefficients are shown.

* $p < .05$. ** $p < .01$. *** $p < .001$

The Sobel test was conducted by the following equation:

$$z\text{-value} = a*b/\text{SQRT}(b^2*s_a^2 + a^2*s_b^2) \text{ where}$$

a = raw (unstandardized) regression coefficient for the association between independent variable and mediator.

s_a = standard error of a .

b = raw coefficient for the association between the mediator and the dependent variable (when the independent variable is also a predictor of the dependent variable).

s_b = standard error of b .

In this case, $a = .201$, $s_a = .027$, $b = .822$ and $s_b = .180$. Calculations show the z-value equals 3.89, which is significant at $p < .001$. Due to the three conditions that are met as well as the significant Sobel-test, hypothesis 3 is supported and full mediation is shown.

Hypothesis 4: *The relationship between job autonomy and intrinsic motivation is partially mediated by perceived competence*, see Figure 9.

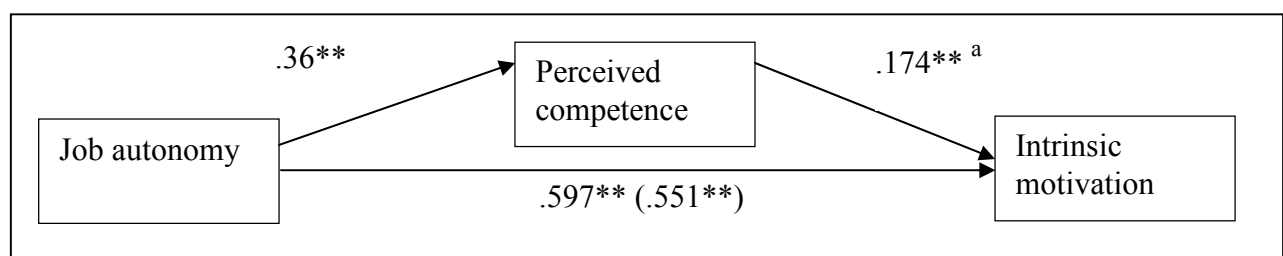


Figure 9. Mediation effect – Hypotheses 4.

Standardized beta-coefficients are shown. Number in parenthesis shows the path when perceived competence is entered in the regression model.

^acontrolled for Job autonomy.

* $p < .05$, ** $p < .01$, *** $p < .001$

Regarding the third condition by Baron and Kenney, relationship between job autonomy and intrinsic motivation is only slightly diminished (not disappeared). The standardized beta-coefficient for the relationship between the independent and dependent variable was reduced from .597 to .551 when entering perceived competence in the model, see Table 17. Since the significant relationship between the independent and dependent variable did not disappear, full mediation is not found. However, the Sobel test gives a z-value of 3.79 at $p < .001$. Therefore, partial mediation is found.

Table 17. Test of hypothesis 4.

	Intrinsic motivation
Perceived comp.	.174**
Job autonomy	.551***
R square	.406

Standardized regression coefficients are shown.

*p<.05. **p<.01. ***p<.001

Hypothesis 5: *The relationship between relatedness at work and intrinsic motivation is partially mediated by perceived competence*, see Figure 10.

The two first conditions are shown in Figure 10. Regarding the third condition to Baron and Kenney, the relationship between relatedness at work and intrinsic motivation disappeared (.095) and is not significant when perceived competence is entered in the regression model, see Table 18. Therefore, full mediation is found and not partial mediation as hypothesized.

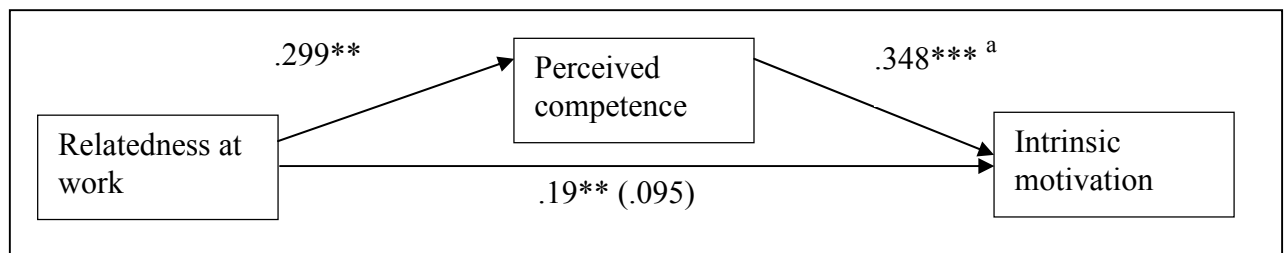


Figure 10. Mediation effect – Hypotheses 5.

Standardized beta-coefficients are shown. Number in parenthesis shows the path when perceived competence is entered in the regression model.

^acontrolled for Relatedness at work.

*p < .05, **p < .01, ***p < .001

Table 18. Test of hypothesis 5.

	Intrinsic motivation
Perceived comp.	.348***
Relatedness	.095
R square	.15

Standardized regression coefficients are shown.

*p<.05. **p<.01. ***p<.001

8.6 Results research question 2

Research question 2: How is intrinsic motivation related to performance and turnover intention? Two hypotheses are derived from research question two.

Hypothesis 6: There is a positive relationship between intrinsic work motivation and performance.

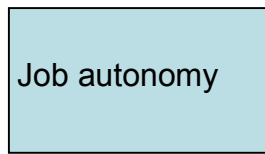
When inspecting the correlation matrix (Table 12), the zero order correlation between intrinsic work motivation and performance is .48. The correlation is significant at the .01 level. Hypothesis 6 is supported.

Hypothesis 7: There is a negative relationship between intrinsic work motivation and turnover intention.

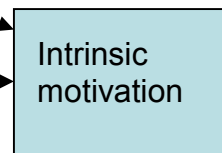
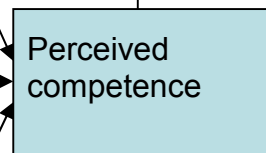
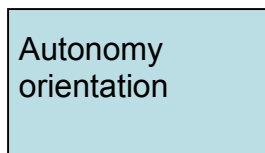
The correlation matrix shows a significant negative relationship between intrinsic work motivation and turnover intention of -.37. The zero-order correlation is significant at .01 level.

A summary of results from research question 1 and research question 2 are given in the following. Regarding research question 1, individual difference in autonomy orientation and job autonomy are both uniquely related to intrinsic work motivation. Hypothesis 1 – alternative a) was supported. The competing hypothesis (Hypothesis1-alternative b) was not supported. Both relatedness at work and job autonomy accounted for independent variance in employees' intrinsic work motivation. Hypothesis 2 was supported. Hypothesis 3 was supported. The relationship between autonomy orientation and intrinsic motivation is fully mediated by perceived competence. Hypothesis 4 was supported. Perceived competence partially accounts for association between job autonomy and intrinsic motivation. Partial mediation is found. Regarding hypothesis 5, the relationship between relatedness at work and intrinsic motivation is mediated by perceived competence. Full mediation is found, and partial mediation was hypothesized. With regard to research question 2, Hypothesis 6 and Hypothesis 7 were supported, indicating that there is a positive association between intrinsic motivation and performance and a negative relationship between intrinsic motivation and turnover intention. The findings from research questions 1 and 2 are summarized in Figure 11.

JOB FACTOR



IND. FACTOR



SOCIAL FACTOR

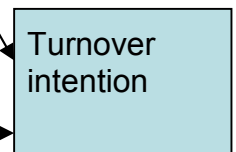
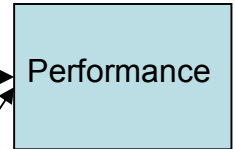
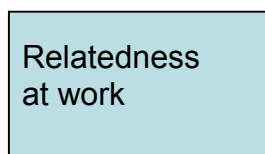


Figure 11. The research model.

The model is based on findings from research questions 1 and 2.

Note: relations between the variables are coded with letters from a - i for further use in Chapter 8.7.

8.7 Results research question 3

Research question 3: Are findings from research questions 1 and 2 contingent upon type of organization? Two aspects are considered: (i) differences in intrinsic motivation and (ii) strength of the relationships between the variables. These issues are outlined in the two questions:

- (i) Does intrinsic motivation differ among employees in the profit and nonprofit sectors?*
- (ii) Are there differences in path coefficients between the antecedents, intrinsic motivation and the outcome variables in profit and nonprofit organizations?*

Research question 3 will be answered by conducting Levene's test (8.7.2) as well as a t-test and Effect size (8.7.3). Section 8.7.4 compares strength of the relations between variables. First, section 8.7.1 investigates the assumptions of differences in salary and employees' extrinsic motivation in the profit and nonprofit organization.

8.7.1 Tests of assumptions regarding differences in external factors

In order to test whether wage differences exist in the two organizations, full time nurses in the profit and nonprofit organization were contrasted. Part time workers were left out since this would complicate and give an unclear picture of possible salary differences. Since there were only four physicians as full time employees from the sample in the profit organization, t-tests were not conducted for the physicians. Salary was divided into five categories in the questionnaire. Table 19 shows that significant differences in means for salary among the nurses were found. Nurses in the profit organization reported higher salary than the nurses in the nonprofit organization did. Since Levenes test showed that equal variances for salary were not assumed, the significance level calculated in SPSS was .021 in comparison to .002 if equal variation was assumed. However, significant differences in salary are shown. The qualitative pilot study also indicated differences in wages between the two types of organizations.

Table 19. T-test for differences in wage level.

<i>Variable</i>	<i>Nonprofit org</i>			<i>Profit org</i>			<i>T-test</i>	<i>Sig.</i>
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>		
Salary full time nurses	38	2.03	.37	10	2.50	.53	-2.68	.021

The other underlying assumption regarding external factors, differences in extrinsic motivation in the two organizations, is tested in the following. Extrinsic motivation was assessed by a four item scale from Kuvaas (2007b). As the items indicate, this kind of economic based extrinsic motivation belongs to the external regulation (see Table 1).

1. In the event that I would put in extra work, I expect to be paid for this.
2. For me, it is important to have a “carrot” as an incentive to do a good job.
3. Financial perks, such as bonuses and commissions are important to how I carry out my job.
4. Had I been offered better financial terms, I would have done a much better job.

Cronbach’s alpha for the scale is .74. A zero order correlation between intrinsic and extrinsic motivation gives -.14 and is significant at .05 alpha level. The correlation between extrinsic motivation and performance (.05) was not significant.

Table 20. T-test for differences in extrinsic motivation.

<i>Variable</i>	<i>Nonprofit org</i>			<i>Profit org</i>			<i>T-test</i>	<i>Sig.</i>
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>		
Extrinsic motivation	150	3.29	1.38	103	3.95	1.41	-3.67	.000

Table 20 shows that there are significant differences in the means in extrinsic motivation between the profit and nonprofit organization. Employees in the profit organization reported higher extrinsic motivation than employees in the nonprofit organization did. Levene’s test showed that equal variances for extrinsic motivation were not rejected, hence equal variation is assumed.

The underlying assumptions regarding external factors are tested above. Expected differences were supported. Given these differences in salary and extrinsic motivation among employees in the profit and nonprofit organization, the question and focus on possible differences in intrinsic motivation between the two organizations are emphasized in this study and attention to this is given in the following.

8.7.2 Levene's test

This tests whether the variance (variation) of scores for the profit and nonprofit organization is the same. The hypothesis that all means are equal, is not rejected at the 5 percent level, see Table 21. Hence, equal variances of scores for the two groups are assumed.

Table 21. Test for equal variances.

<i>Variable</i>	<i>Levene's test for equal variances</i>	
	<i>F</i>	<i>Sig.</i>
Job autonomy	4.04	.05
Autonomy orientation	.36	.55
Relatedness at work	.63	.43
Perceived competence	2.33	.13
Intrinsic motivation	.30	.58
Performance	.82	.37
Turnover intention	.32	.57

* $p < .05$ Note: Bonferroni's adjustment lowers the alpha for each test to .007. ($.05/7 = .007$)

8.7.3 T-test and Effect size

Table 22. Differences between the profit and nonprofit organization.

<i>Variable</i>	<i>Nonprofit org</i>			<i>Profit org</i>			<i>T-test</i>	<i>Sig.</i>
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>		
Job autonomy	139	4.96	1.31	92	5.03	1.54	-.34	.74
Autonomy orientation	139	5.80	.68	91	5.79	.74	.13	.89
Relatedness at work	140	5.77	.85	90	5.73	.78	.32	.75
Perceived competence	137	6.11	.67	90	6.83	.58	-2.04	.04
Intrinsic motivation	134	5.13	1.04	89	5.06	1.13	.48	.63
Performance	137	5.17	.75	90	5.50	.85	-3.11	.002
Turnover intention	139	2.15	1.39	90	2.25	1.37	-.54	.60

* $p < .05$ Note: Bonferroni's adjustment lowers the alpha for each test to .007

An independent samples t-test was conducted to assess differences between profit and nonprofit organization, see Table 22. No differences in means were found for job autonomy, autonomy orientation, relatedness at work, perceived competence, intrinsic motivation or

turnover intention. Significant differences in means were found for performance, where employees in the profit organization reported higher performance than employees in the non-profit organization did.

According to recent reports regarding statistical practices in psychology, it is suggested that effect sizes are always reported (Cumming et al., 2007). Cohen's d is an appropriate effect size measure to use in the context of a t-test on means. Unlike significance tests, Cohen's d is independent of sample size. d is defined as the difference between two means divided by the pooled standard deviation of the groups. Effect size is measured here as the standardized difference between two independent groups.

$$\text{Cohen's } d = M_1 - M_2 / \sigma_{\text{pooled}}$$

$$\text{where } \sigma_{\text{pooled}} = \sqrt{[(\sigma_1^2 + \sigma_2^2) / 2]}$$

There are different ways of interpreting the resultant effect size, the most common is where 0.2 indicates a small effect, 0.5 a medium and 0.8 a large effect size. Table 23 shows that effect size is small for job autonomy, autonomy orientation, relatedness at work, intrinsic motivation and turnover intention. Cohen's d for perceived competence and performance shows medium effect size.

Table 23. Effect sizes.

<i>Variable</i>	<i>Cohen's d</i>
Job autonomy	-.047
Autonomy orientation	.018
Relatedness at work	.044
Perceived competence	-.277
Intrinsic motivation	.071
Performance	-.42
Turnover intention	-.072

8.7.4 Invariance analyses

In line with suggestions made by Byrne (2001), I used the following strategy to test the proposed pattern of relationships. Firstly, each sample was tested separately and it was determined that the fits of the independent models were adequate. The two independent

models are called SEM Profit and SEM Nonprofit in Table 24 and Table 25. After these preliminary analyses, a baseline model (Model 0) is estimated by simultaneous tests across the two organizations with no constraints. The fit of Model 0 was adequate (see Table 24), model 0 represents the best possible fit of the data to the model.

Secondly, tests for invariance were conducted. Model invariance is determined by comparisons of the baseline model (model 0) to models in which paths are constrained. A model that does not show a significant change in chi-square compared to the baseline model is deemed invariant or equal to model 0. In order to test the equivalence of each path coefficient in the model, nine tests were conducted, in which one of the nine path coefficients was constrained to the baseline model. There were nine separate analyses in which one of the nine paths was constrained in each analysis. Thus, how much unique influence the constraint of each path had on the chi-square value for the model was determined. Path c (Figure 11) had the smallest influence on chi-square. Path g had the second smallest influence. Then path a, followed by paths e, f, i, d, and b had slightly higher influences on chi-square. Path h had the most influence on the fit indices. These nine paths were constrained step-by-step in the mentioned order. The fit of the constrained model at each step was compared with the baseline model (Model 0) in which none of the paths was constrained. Table 24 shows the results of this explorative stepwise approach.

Several commonly used fit indices were used to assess the model fit. According to Jöreskog (1993), the chi-square is regarded as a *measure* of fit rather than a *test* statistic. Hence, chi-square measures the overall fit of the model to the data. More specifically, it measures the distance between the covariance matrix and the fitted covariance matrix. As chi-square is sensitive to sample size, four additional fit indices that were relatively free of influence on sample size were used in this study. These were non-normed fit index (NNFI or TLI), the comparative fit index (CFI), the incremental fit index (IFI) and the root mean square error of approximation (RMSEA). A model is considered to have adequate fit if values are greater than .90 for the NNFI, CFI and IFI, and a value less than .10 for the RMSEA (Byrne, 2001, pp. 79-88). A good fit shows NNFI, CFI and IFI values close to .95 and a RMSEA value less than .05 (ibid).

Table 24. Results of the invariance analyses.

<i>Model tested</i>	χ^2	<i>df</i>	<i>P</i>	$\Delta\chi^2/\Delta df$	Δp	<i>NNFI</i>	<i>CFI</i>	<i>IFI</i>	<i>RMSEA</i>
SEM both org (231)	15.82	9	.07	-	-	.95	.98	.98	.057
SEM Profit (91)	10.23	9	.33	-	-	.97	.99	.99	.039
SEM Nonprofit (140)	16.39	9	.06	-	-	.92	.97	.97	.077
Model 0 (no constraints)	26.62	18	.09	-	-	.94	.97	.98	.046
Model 1 (c constrained)	26.62	19	.11	.002/1	.96	.95	.98	.98	.042
Model 2 (c and g constr.)	26.65	20	.15	.021/2	.99	.96	.98	.98	.038
Model 3 (c,g,a constr.)	26.80	21	.18	.177/3	.98	.97	.98	.98	.035
Model 4 (c,g,a,e constr.)	27.10	22	.21	.47/4	.98	.97	.99	.99	.032
Model 5 (c,g,a,e,f constr.)	27.78	23	.22	1.16/5	.95	.97	.99	.99	.030
Model 6 (c,g,a,e,f,i constr.)	29.11	24	.22	2.49/6	.87	.97	.98	.99	.030
Model 7 (c,g,a,e,f,i,d constr.)	30.36	25	.21	3.74/7	.81	.97	.98	.98	.031
Model 8 (c,g,a,e,f,i,d,b constr.)	32.10	26	.19	5.47/8	.71	.97	.98	.98	.032
Model 9 (all paths constr.)	34.40	27	.16	7.78/9	.56	.97	.98	.98	.035

Note: Results of the invariance analyses across organizations showing goodness of fit indices from the multigroup analysis. Number of cases is in parentheses. The letters a – i indicate paths in the model given in Figure 11. SEM = structural equation model with observed variables, NNFI = non-normed fit index, CFI = comparative fit index, IFI = incremental fit index, RMSEA = root mean square error of approximation. Model 0 is the baseline model for the invariance analyses evaluating structural equivalence.

As autonomy orientation is included in the analyses, sample size was reduced with 29 cases to 92 in the profit organization and 140 in the nonprofit organization (see explanation Chapter 8.2). With these relatively small sample sizes, observed variables and not latent variables were used in the structural analysis. AMOS is one of the more commonly used SEM programs today and is also used in this study. One limitation of the AMOS-program is the lack of information given in the missing data case. Goodness of fit indices were a bit non-standard in the missing data case and modification indices were not available at all. As both types of information are of interest, replacement of missing data was handled through the EM imputation method. The method is based on that the data are missing completely at random (MCAR). The few missing values in the sample (see Appendix C) were regarded as MCAR, apart from one case where many of the items were left open. This case was deleted from the sample. Means and standard deviations obtained after missing values were replaced by the imputed data showed no changes or only minor changes compared to the results before imputation. This is along with previous experiences with EM imputation: “some differences can be detected, but no consistent pattern emerges” (Hair et al., 1998, p. 61). Regarding

sample size, from a total of 261 respondents, 231 remained in the SEM analyses, 91 in the profit organization and 140 in the nonprofit organization.

Table 25. Parameter estimates for the invariance analyses.

<i>Model tested</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
SEM both org (231)	.50***	.28***	.36***	.15*	-.22***	.28***	.21***	.32***	-.34***
SEM Profit (91)	.50***	.24**	.42***	.073	-.17	.16	.20*	.46***	-.28**
SEM Nonprofit (140)	.50***	.30***	.34***	.19*	-.24**	.32***	.22**	.25**	-.37***
Model 0 (no constraints)									
Model 1 (c constrained)			.42***						
Model 2 (c and g constr.)			.42***				.19***		
Model 3 (c,g,a constr.)	.52***		.42***				.19***		
Model 4 (c,g,a,e constr.)	.52***		.42***		-.21***		.19***		
Model 5 (c,g,a,e,f constr.)	.52***		.42***		-.21***	.22***	.19***		
Model 6 (c,g,a,e,f,i constr.)	.52***		.42***		-.21***	.22***	.19***		-.35***
Model 7 (c,g,a,e,f,i,d constr.)	.52***		.41***	.15*	-.21***	.23***	.20***		-.35***
Model 8 (c,g,a,e,f,i,d,b constr.)	.52***	.30***	.40***	.15*	-.21***	.23***	.20***		-.35***
Model 9 (all paths constr.)	.52***	.30***	.40***	.15*	-.21***	.24***	.20***	.35***	-.35***

Note: Number of cases is in parentheses. The letters a – i indicate paths in the model given in figure 7.4. SEM = structural equation model with observed variables. The letters a-i show the paths between the variables, see Figure 11. Parameter estimates are standardized. Model 0 is the baseline model for the invariance analyses evaluating structural equivalence. *p<.05. **p<.01. ***p<.001

Results of the invariance analyses are presented in the following. Structural models fit the data in both samples, see numbers for SEM Profit and SEM Nonprofit in Table 24, and the parameter estimates in Table 25. Constraining path c yielded no significant change in fit, chi-square change = .002 (Model 1). In addition, constraining path g also yielded a nonsignificant change in fit: chi-square change = .021 (Model 2). Furthermore, constraining paths a, e, f, i, d and b did not yield any significant change in fit (Model 3, Model 4, Model 5, Model 6, Model 7 and Model 8). Finally, the last path (n) was also constrained (Model 9), which also yielded a nonsignificant change in fit: chi-square change = 7.78. None of the paths yielded any significant change in fit both relative to the baseline model and relative to the model preceding. These results suggest that the strengths of all the relations are equivalent across the profit and nonprofit organization.

Figure 12 presents model 9 from Table 25, showing that all relations are equivalent across the organizations. Results show that all paths are judged equal in the two organizations. To sum up the results regarding research question three, no differences in intrinsic motivation between the two organizations were found. Except for performance, no differences were found in means. Further, no differences in paths coefficients between the profit and nonprofit organizations were found. The results of no differences in intrinsic motivation as well as significant and equal path coefficients for the intrinsic motivation – performance link indicate that regardless of pay level and differences in extrinsic motivation in the two organizations, intrinsic motivation is positively associated with performance in both organizations. Thus, factors influencing intrinsic motivation play an important role in both the profit and nonprofit organization.

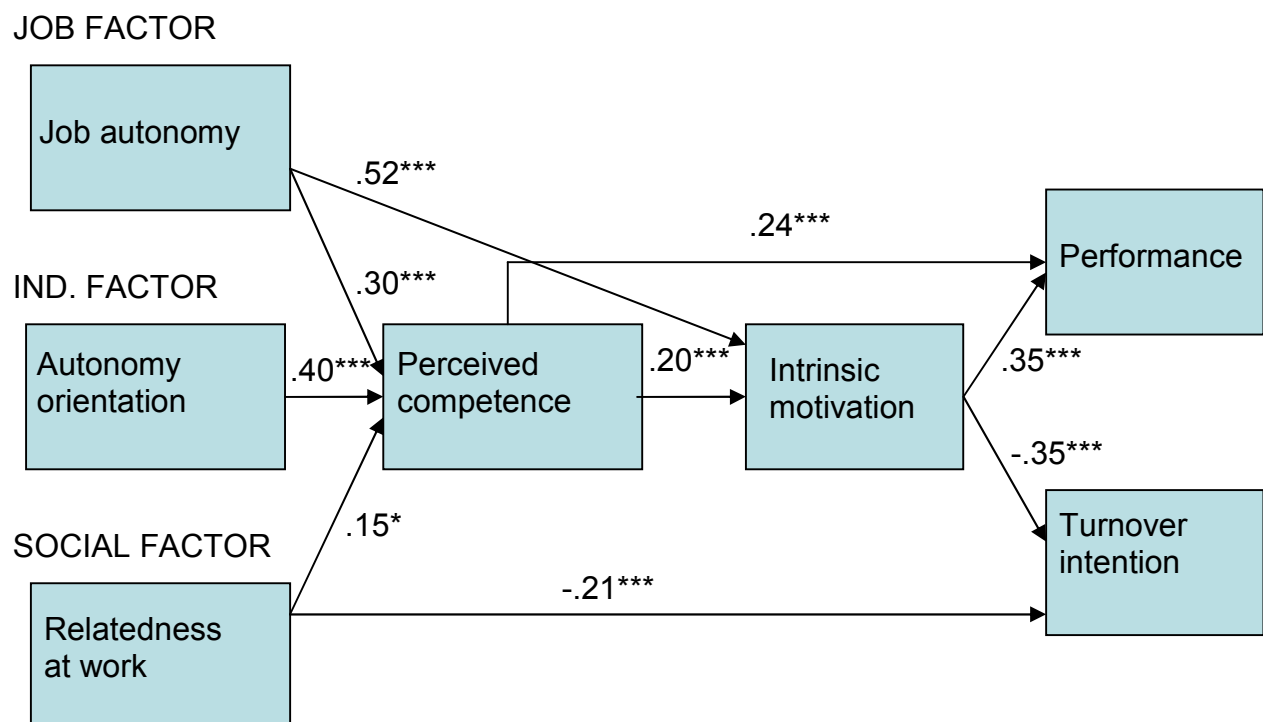


Figure 12. The research model with parameter estimates.

Notes: Standardized parameter estimates for the structural model with observed variables are shown (using AMOS 6.0). For paths in the structural model that were judged equivalent across organizations, only one coefficient is reported. Hence, all paths were judged equivalent. Although the paths were judged equivalent, they differ slightly in the profit and nonprofit organization. Path coefficients for the profit organization are reported here. See Appendix E for estimates for both organizations.

Chi-square (df = 27) = 34.40, $p > .16$

NNFI = .97, CFI = .98, IFI = .98, RMSEA = .035

8.8 Summary

Based on objectives 1, 2 and 3 of the study (see Chapter 1) three research questions were put forward.

Research question 1: How are job factors, individual factors and social factors related to intrinsic motivation?

Regarding individual factors, two alternative hypotheses on the role of autonomy orientation were proposed. Hypothesis 1a) on additive effect based on SDT was supported. The alternative hypothesis 1b) of autonomy orientation as a moderator variable was not supported. Hence, both job autonomy and the individual difference of autonomy orientation accounted for independent variance in intrinsic motivation. Regarding social factors, the role of relatedness at work was investigated in hypothesis 2. Both relatedness at work and job autonomy contributed to unique variance to intrinsic work motivation. The hypothesis based on SDT and the qualitative pilot study was supported. An alternative hypothesis was not proposed. Hypotheses 3, 4 and 5 investigated perceived competence as a mediator between the antecedents and intrinsic motivation. Regarding hypothesis 3, the relationship between autonomy orientation and intrinsic motivation was mediated by perceived competence. Hypothesis 4 was also supported as posited; the relationship between job autonomy and intrinsic motivation was partially mediated by perceived competence. Hypothesis 5 proposed that the relationship between relatedness at work and intrinsic motivation was partially mediated by perceived competence: full mediation was found.

Research question 2: How is intrinsic motivation related to performance and turnover intention?

Regarding research question 2, hypothesis 6 and hypothesis 7 were supported. A positive association between intrinsic motivation and performance and a negative relationship between intrinsic motivation and turnover intention were found.

Research question 3: Are findings from research questions 1 and 2 contingent upon type of organization?

Two aspects were considered: (i) differences in intrinsic motivation and (ii) strength of the relationships between the variables in profit and nonprofit organizations. Based on theoretical framework and previous empirical findings two research questions were proposed:

(i) Does intrinsic motivation differ among employees in the profit and nonprofit sector?

(ii) Are there differences in path coefficients between the antecedents, intrinsic motivation and the outcome variables in profit and nonprofit organizations?

The underlying assumptions of differences in wage rate and differences in extrinsic motivation in the two organizations were confirmed, with the profit organization reporting significantly higher salary and extrinsic motivation. Regarding the first question, no differences in means were found for intrinsic motivation between the two organizations. Differences in means were not found for job autonomy, autonomy orientation, relatedness at work, perceived competence or turnover intention either, but significant higher performance were reported in the nonprofit organization. Regarding the second question, no differences in path coefficients between the profit and the nonprofit organizations were found.

In summary, the present study contributes to previous work on intrinsic motivation by contrasting one profit and one nonprofit organization that differ in external (financial) motivators. In addition, by responding to calls for research on social factors influencing motivation as well as the motivation-performance link and the motivation-turnover link, contribution to the knowledge base on intrinsic motivation has been made. Furthermore, perceived competence as a mediator between relatedness and intrinsic motivation has not been examined in previous studies.

PART V

9. DISCUSSION

The purpose of this chapter is to discuss and explain the findings in this study (Chapter 9.1). Theoretical and practical implications are presented (Chapters 9.2 and 9.3) and limitations and suggestions for future research are provided (Chapter 9.4).

9.1 Discussion of results

The objectives of this research were threefold. Firstly, the role of job factors, social factors and individual factors on intrinsic motivation were investigated. Secondly, outcomes of intrinsic motivation were studied and thirdly, possible differences between profit and nonprofit organizations were examined. Results from the three research questions are discussed in the following. Discussion of the issues raised in research question three have been given the most attention in the discussion section since explanations for the findings related to research question three are not as clear as for results from research question one and research question two.

9.1.1 Research question one

Job autonomy, relatedness and autonomy orientation all account for independent variance in intrinsic motivation. Since job autonomy belongs to the category of job factors, social factors are represented by relatedness and autonomy orientation refers to individual factors, it is found that job factors, social factors and individual factors influence intrinsic motivation. The hypothesis based on Gagné and Deci (2005) stating that autonomy orientation and social environment, hence trait level and situational level (autonomy-supportive work climates) have an impact on motivation was supported. Hence, individual difference in autonomy orientation account for independent variance to intrinsic motivation. The alternative hypothesis that autonomy is regarded as a moderator variable was not supported. This result implies that job autonomy is equally important for employees with high autonomy orientation and for employees with low autonomy orientation.

A note regarding the relationship between job autonomy and autonomy orientation is made. The correlation matrix in Table 12 shows that there was no significant correlation between job

autonomy and autonomy orientation. This is an interesting and somewhat surprising finding. It would be expected that autonomy orientation affects workers' perception of the work environment such as job autonomy, and therefore a correlation between the two variables would be expected. Likewise, the speculation of whether employees' autonomy orientation also affects managers' autonomy support in an interactive way was not revealed in this study. That is, if an employee is autonomy oriented, the leader may sense this and allow her or him greater autonomy, which would give the employee the experience of greater job autonomy.

Hypotheses 2, 3 and 4 were supported as theorized. Hypothesis 5 was "more than supported." The relationship between relatedness and intrinsic motivation was hypothesized to be partially mediated by perceived competence. However, full mediation was found. One explanation could be that relatedness may impact perceived competence in terms of feedback from colleagues. In the health sector where employees (e.g. nurses) work in teams, it might be likely that relatedness impacts perceived competence. This is along with findings from the qualitative pilot study where it was stated that feedback was received from colleagues and patients more than from their managers.

9.1.2 Research question two

Outcomes of intrinsic motivation were explored. Results show that there is a positive relationship between intrinsic motivation and performance and a negative association between intrinsic motivation and turnover intention. Thus, Hypotheses 6 and 7 were supported. The model also shows a direct negative relation between relatedness and turnover intention, as assumed from the pilot study. Although turnover intentions are related to actual turnover behavior (Richer et al., 2002), it is reasonable to assume that this correlation is dependent upon the macroeconomic conditions such as to what extent jobs are available. When the job market is good, it is likely that the relation between turnover intention and actual turnover is higher than when the job market is low. In addition, the relationship between turnover intention and actual turnover may be dependent upon the industry and jobs available. For instance, it is not unreasonable to suspect that the correlation between turnover intention and actual turnover might be higher in fields such as the health sector than within academia and the research field.

There is little doubt that performance is a goal in organizations. An interesting question to raise is whether low turnover is regarded as a similar unified goal. As argued before, turnover

is considered as an important issue for many organizations. However, Katz and Kahn (1966, p.355) state that low turnover may not necessarily be a goal. They argue that organizations with many poorly motivated people may have the problem of too little turnover. However, this study reveals that employees that are intrinsically motivated do not tend to leave the organization and that intrinsic motivation is positively related to performance.

9.1.3 Research question three

Two aspects were in focus in relation to research question three; (i) possible similarities or differences in intrinsic motivation among employees in the profit and nonprofit organization and (ii) strength of relationships between the variables.

Question one: Intrinsic motivation in profit and nonprofit organizations

The underlying assumptions regarding differences in external motivators were met. Significant differences in means for salary and for economically based extrinsic motivation were found, in which the profit organization yielded higher mean values. Despite these differences, no differences in means were found for intrinsic work motivation in the profit and nonprofit organization (Table 22). A negative significant correlation between intrinsic and extrinsic motivation was found (-.14) that supports SDT, which regards extrinsic and intrinsic motivation as dependent upon each other. However, since the correlation between extrinsic and intrinsic motivation was slightly negative and since a significantly higher degree of extrinsic motivation was found in the profit organization, it would be reasonable to expect a lower degree of intrinsic motivation in the profit organization compared to the nonprofit organization. The explanation as to why no differences in intrinsic motivation in the two organizations were found is linked to lack of differences in job autonomy, relatedness at work and autonomy orientation which are the antecedents of intrinsic motivation. The discussion of lack of differences in the mentioned antecedents is linked up to the theory of isomorphism.

Isomorphism

The link between ownership forms and possible differences in intrinsic motivation can be analyzed by investigating possible structure differences in the two types of organizations that may impact job autonomy and/or relatedness at work. This might be due to similar structures and processes in the two types of organizations operating within the same field. The discussion is related to what DiMaggio and Powell (1991a) label as processes of *isomorphism*. The theory of isomorphism seeks to explain why there is homogeneity of

organizational forms and practices. In the initial stages, organizational fields show diversity in approach and form. However, once a field becomes established, there is a push towards homogenization (DiMaggio & Powell, 1991a). The organizational field is defined as organizations that produce similar services or products (ibid). There are two types of isomorphism: competitive and institutional. The first assumes system rationality that emphasizes market competition. Such a view is relevant for those fields where free and open competition exist. In this study institutional isomorphism is regarded as a useful tool for understanding the politics that permeate modern organizations.

The theory of isomorphism belongs to the new institutionalism, which traces its roots to the “old institutionalism” of Philip Selznick, the American sociologist regarded by many as the father of institutional theory. Both the old and new approaches reject the rational-actor models of organizations. When assuming an institutional perspective, social, psychological and political elements in the study of organizations are emphasized (Scott, 1995). The old and new approaches recognize social and cultural basis of external influence on organizations and agree that institutionalization constrains organizational rationality. The new institutional perspective stresses the social legitimacy where organizations are dependent upon acceptance of the society in which they operate (DiMaggio & Powell, 1991b; Gooderham, Nordhaug, & Ringdal, 1999).

Three types of mechanisms through which institutional isomorphic change occurs, are described. They are: *coercive*, *mimetic* and *normative* isomorphism (DiMaggio & Powell, 1991a). *Coercive* processes stem from legal regulations that force organizations within a field into a common practice. *Mimetic* isomorphism occurs as a result of uncertainty resulting in standard responses as some organizations imitate others within a field. The third source of isomorphic organizational change is *normative* and is related to professionalization. Norms for how things should be done are established by professions that take over a field. This typology is at the analytical level, meaning that the types are not necessarily empirically distinct.

From the three mechanisms by which isomorphic change occur, coercive isomorphism and normative isomorphism are regarded relevant as homogenization processes in this research where the health sector is the chosen field of study. Regarding the coercive isomorphism, Norway has a high degree of state intervention in the welfare area. The existence of a

common legal environment affects different aspects of organizational behavior and structure. Organizations that depend on the same sources for funding and legitimacy will become more alike. Concerning normative processes, aspects of professionalization are important sources of isomorphism in two regards. One is the norms and values thought in the formal education for health workers. Others are professional networks that span organizations. An organizational field as the health sector includes a large, professionally trained labor force and will be driven by status competition. Organizational prestige and resources are important elements in attracting professionals, which again encourages homogenization processes as the organizations seek to ensure that they are able to provide the same benefits and services as their competitors do.

Based on the mechanisms influencing isomorphic change, some hypotheses and field-level predictors have been proposed by DiMaggio and Powell (1991a). One is that level of isomorphism occurs as a function of the extent to which an organizational field is dependent upon a single (or several similar) source(s) of support for important resources. Another is the greater the organizations in a field transact with agencies of the state, the greater the extent of isomorphism exist in the field. The hypotheses were not empirically tested by DiMaggio and Powell (1991a), and it is beyond the scope of this research to test them as well. However, based on the arguments theorized above, it is likely that the centralization of resources within the health sector in Norway causes homogenization. The reason is that the organizations are placed under pressures from the resource supply which in this case is the state. Although private hospitals in Norway to a greater extent than nonprofit hospitals accomplish private assignments, both profit and nonprofit hospitals in Norway are dependent upon contracts from the state (Regional Health Authority).

Empirical studies support the theory of institutional isomorphism. Investigating isomorphic processes, Lorentzen (2005) found strong processes of professionalization across ownership forms. His study of Norwegian volunteer centers shows that significant differences in activity profiles as a result of ownership cannot be observed. Angell's (1994) study shows and discusses isomorphic processes in religious-based substance abuse treatment centers. Findings from Askeland's (2000) research report what DiMaggio and Powell (1991a) call coercive isomorphism, in which a new law reform in the organization of the governing structure of the Church of Norway influences processes in local churches in the municipalities. Mimetic and normative isomorphism are also discussed in his study. The latter two studies mentioned do

not compare organizations with different ownership forms, as this study does. However, they compare organizations within one specific organizational field, as current study does.

When turning back to the question of whether it is likely to expect differences in job autonomy and relatedness at work in the profit and nonprofit organization within the health sector, the explanations may be related to the theory of isomorphism. An employee's job autonomy is linked to the manager's controlling style vs. the manager's autonomy supportive style. How likely is it that these styles differ in the two types of organizations? Following DiMaggio and Powell's (1991a) *normative* mechanism through which institutional isomorphic change occurs, professionalization of management tends to proceed with the structuring of organizational fields. As the field of interest is not at an initial stage, it is likely to assume there are no systematic differences in management styles and hence job autonomy in the two types of organizations that differ in ownership form as well as their initial purpose for existing. What then about relatedness at work? Is it likely to believe that co-worker climate (relatedness) in the profit and nonprofit organizations are significantly different? Identifying activities that influence relatedness at work is beyond the scope of this research where the variable is treated as an independent variable. However, following DiMaggio and Powell's (1991a) isomorphic processes towards homogenization within an organizational field, the absence of differences in co-worker climate (relatedness at work) is expected.

Investigation of differences in autonomy orientation is briefly commented upon in the following. No differences in autonomy orientation between profit and nonprofit organizations were found. As in Chapter 5.2, I could not theoretically, empirically or logically argue differences in employees' autonomy orientation across types of organizations, the findings are interesting and informative in the way that autonomy oriented employees work in profit as well as nonprofit hospitals in Norway.

Question two: Strength of the relationships between the variables

In addition to possible differences in intrinsic motivation in the two organizations, differences in relationships between the antecedents, intrinsic motivation and the outcome variables were investigated. Invariance analyses showed that no differences in path coefficients between profit and nonprofit organizations were found. The structural model fit the data in both organizations, providing support for the self-determination model. The invariance analyses in the present study support the statement of SDT regarding the universality of basic

psychological needs in the way that the model fit the data in both types of organizations. Hence, employees in a profit and nonprofit organization in which differences in external motivators and extrinsic motivation are present yield positive effects through satisfaction of need for relatedness, autonomy and competence. The present study supports the importance of relatedness, job autonomy and perceived competence across types of organizations in Norway (one profit and one nonprofit health institution). However, the other aspect of SDT (CET) regarding extrinsic and intrinsic motivation being dependent upon each other and negatively correlated seems to be challenged in this study, which is commented upon in the following.

Based on the findings, an interesting discovery regarding performance is commented upon in the following. Significant differences in means for performance between the profit and nonprofit organization were found. However, no differences were found for the factors explaining performance, that is, no differences between the two organizations were found for intrinsic motivation and perceived competence. Moreover, no differences in path coefficients for the intrinsic motivation – performance link, and the perceived competence – performance link were found. The fact that differences in performance as well as lack of differences in means for factors influencing performance and lack of differences in path coefficients were found, lead one to search for additional factors explaining performance. It is shown in the study that differences in extrinsic motivation were found in which employees in the profit organization reported higher extrinsic motivation than the nonprofit organization. The question of whether economic-based extrinsic motivation results in additional performance is therefore raised. The present study has focused on antecedents and consequences of intrinsic motivation in two organizations that differ with respect to external motivators. It is shown that intrinsic motivation is positively related to performance in both organizations. Based on the findings stated above of significantly higher performance in the profit organization, the next and following step is to empirically investigate the question raised, as described in Section 9.4.2.

To sum up 9.1.3, lack of differences in job autonomy, relatedness at work and hence intrinsic motivation can be explained by the isomorphic process of organizations within the same field that is not at an initial stage (DiMaggio & Powell, 1991a). Lack of differences in strengths of relations between variables can be explained by the basic psychological needs that are considered to be universal (Deci & Ryan, 1985a).

9.2 Theoretical implications

Motivation is examined at a trait level and more specific level simultaneously. Individual and situational factors are shown to impact intrinsic motivation at work. This research extends previous Self-Determination Theory research. The SDT model that is based on Self-Determination Theory was supported in a profit and nonprofit organization in Norway. The model based on autonomy orientation as a moderator was not supported.

There are two main theoretical implication revealed in this research. First, the investigation of the variable relatedness as an isolated and independent variable influences intrinsic motivation. There is a lack of research that examines the importance of social factors on motivation (Morgeson & Campion, 2003; Parker & Wall, 2001). SDT emphasizes autonomy and competence more than relatedness regarding motivation (Deci & Ryan, 1985a, 2000). However, previous organizational SDT studies did not separate the three needs. Previous SDT studies that included relatedness as a variable have investigated relatedness as part of the basic psychological needs variable (Baard et al., 2004; Deci et al., 2001; Ilardi et al., 1993; Kasser et al., 1992; Leone, 1995; Lynch et al., 2005). The basic psychological need variable includes competence and autonomy in addition to relatedness. Based on findings from this study, relatedness at work is found to independently contribute and account for significant variance to intrinsic motivation at work.

Second, the link between relatedness and perceived competence was not investigated in previous organizational SDT studies. Results of the current research revealing perceived competence as a mediator between relatedness and intrinsic motivation needs to be tested in other organizational research settings/fields as well as other countries. Moreover, this research supported the theory with regard to the link between intrinsic motivation and performance and the link between intrinsic motivation and turnover intention. In addition, the hypothesis that autonomy orientation account for independent variance in intrinsic motivation supported SDT.

9.3 Practical implications

The issue of work motivation has been highlighted among organizational researchers as well as practicing managers. Emphasis in this study has been put on factors beyond money that maintain and enhance intrinsic work motivation. It is shown that intrinsic motivation yields positive outcomes such as increased performance and reduced turnover intention. Practically relevant findings in this study are related to facilitation of intrinsic motivation, that supports job autonomy, relatedness at work and perceived competence. The individual difference of autonomous causality orientation that also accounts for independent variance in employees' intrinsic work motivation, does not involve managerial implications to the same extent.

Job autonomy is related to autonomy support in the way that the managers impact the employees' experience job autonomy. The opposite of autonomy support is controlling style. Practically, managerial autonomy support means that leaders must provide choices, that managers encourage self-initiation, that managers acknowledge their employees' perspectives, and that managers provide relevant information in a non-controlling way. Feelings of relatedness at work are also highlighted in this research. Leaders and employees may contribute to an atmosphere where the need for relatedness at work is satisfied. Practical implications for leaders and colleagues in this respect are being aware of the importance of respect and care for each other.

Furthermore, perceived competence may be supported through providing optimal challenges. The leader's ability to see and understand her or his employees is of importance in this regard. Receiving feedback may also support the employees' perceived competence. This is a practical implication for managers as well as employees since feedback from leaders as well as colleagues may support perceived competence.

In summary, based on this study, the following keywords are practical implications for managers in profit as well as nonprofit organizations in order to facilitate intrinsic motivation: provide choices, encourage self-initiation, acknowledgement of employees' perspectives, provide relevant information in a non-controlling way, respect, care, optimal challenges and feedback. These aspects support job autonomy, relatedness, and perceived competence, and hence intrinsic motivation at work in profit as well as nonprofit organizations. In turn,

intrinsic motivation is positively related to performance and negatively related to turnover intention.

9.4 Limitations and future research

Results of this study must be interpreted in light of its limitations. Four categories of limitations are considered in the following.

9.4.1 *Limitations*

First, the chosen research design has obvious limitations. As described in the method chapter (Chapter 7), this cross-sectional design allows associations between variables. As data were collected at one point in time, the direction criterion for ensuring internal validity was not met (Bollen, 1989, ch. 3). The isolation criterion for ensuring internal validity was also difficult to meet. Although the third criterion was met, the association criterion, it is difficult to draw inferences of causality in this study. For example, this correlational study has reported results on the mediating role of perceived competence between relatedness and motivation. However, because this study was based on a cross-sectional design it is difficult to determine if perceived competence is in fact a determinant of intrinsic motivation. In line with same argumentation, it is difficult to determine whether intrinsic motivation leads to performance, or if it is the other way round, that due to high performance, the tasks become enjoyable.

Second, the reliance on a self-reported questionnaire may cause concern about possible mono-method biases. Ratings provided by the same person may cause threats to the measures as well as relationships between the measures. Hence, common method biases (i.e., variance that is attributable to the measurement method rather than to the constructs the measures represent) may arise from having a common rater and a common measurement context. The Harman's single-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) addresses the issue of common method variance by examining the exploratory unrotated factor solution to determine the number of factors that are necessary to account for the variance in the variables. The basic assumption of the technique is that a large amount of common method variance is present if (i) a single factor will appear from the factor analysis or (ii) one general factor will account for the majority of the covariance among the measures. More recently, confirmatory factor analyses have also been used (ibid.). The rotated confirmatory principal component

analyses in the current study generated factors with eigenvalues of 1 or more, and explained variance of the factors ranged from 34.5 percent to 6.0 percent. From this, it seems that common method variance may not be a serious threat in this study. However, four aspects are commented upon in the following with respect to the self-report questionnaires.

(a) Reliance on perceived job autonomy as an objective measure of job autonomy is of concern in the way that tasks are redefined by the individuals. To what extent individuals' perceptions of job characteristics are similar to the objective characteristics could be questioned. (b) Regarding the self-reported variable turnover intention, a limitation could be indicated by not measuring actual turnover by an objective measure. However, two aspects regarding this issue are described. First, it is of interest that the current study is comparable with other studies investigating the relationship between intrinsic motivation and a turnover variable. Since previous studies have used the variable turnover intention (Houkes et al., 2001; Janssen et al., 1999; Kuvaas, 2005; Richer et al., 2002), it is useful that this study assesses the same variable. Second, since the relationship between turnover intention and actual turnover may vary across organizational fields and may be dependent upon macroeconomic conditions (see section 9.1.2), an objective measure such as actual turnover in the organization could therefore be misleading. Of greater concern is the lack of objective measures regarding performance, which is discussed in the following.

(c) The variable performance is measured through self-report in this study. Hence, measures of both predictor and criterion variables are collected from the same rater. Collection of the measures of variables from different sources is preferred (Podsakoff et al., 2003). An objective measure of performance would be an option in this regard. Archival data for performance could be a possibility. However, objective measures for performance in hospitals may not adequately represent the construct of interest. Performance measures such as number of people being treated at the hospital or number of operations in the profit and nonprofit hospitals would not easily be comparable due to slight differences in type of activity. In addition, these data would not easily be linked to performance in the way it is operationalized in this study. Due to weaknesses in objective measures, subjective measures based on raters' judgment are more common (Ilgen & Schneider, 1991).

In order to reduce contamination of subjective measures, interrater reliability can be assessed, meaning that two raters will rate the individuals (Viswesvaran, 2001). Managers' evaluation

of employees' performance in addition to self-report performance would have strengthened the reliability of the overall job performance measurement in this study. This is not applied in the current study for various reasons. In order to link data from different sources, an identifying variable would be required (such as the manager's and employee's names), which could compromise the anonymity of the respondents. In turn, this could reduce the respondent's willingness to participate, or change the nature of the responses (Podsakoff et al., 2003). Another disadvantage is that the use of this remedy may require considerably more time and cost for the researcher. Although interrater measures would be preferred with regard to performance, this study uses a similar measurement method (self-rated performance) as other previous studies do that measure performance in organizations (e.g., Baard et al., 2004; Kuvaas, 2005, 2006a, 2006b).

(d) Lastly, a limitation regarding the self-report questionnaire might be the lack of a specified reference period given in the questionnaire. For example, the concurrent report of relatedness at work (today) may differ from reflections of relatedness at work during a reference period of time. Schwarz (1999) compares concurrent and retrospect reports of behavior and emotions. He shows that individuals report more intense emotions in retrospective than in concurrent reports. Whereas concurrent reports pertain to a short reference period, retrospective reports cover extended periods. Accordingly, participants who provide a concurrent report may construe from the short reference period. The retrospective conditions could be of interest in this study, e.g. regarding relatedness at work and job autonomy. For example, given that the respondent had a bad experience due to relatedness at work one of the last days before answering the questionnaire, this occasion and not the general picture would be reported.

A last comment to be made regarding the self-report measure is the frequency of the method used in previous research. For example, a study by Sackett and Larson (1990) reviewed all research that appeared in the *Journal of Applied Psychology*, *Organizational Behavior*, *Human Decision Process* and *Personnel Psychology* in 1977, 1982 and 1987. They found that 51% (296 out of 577) of all the studies used some kind of self-report measure, and were therefore subject to common rater biases.

The third category of limitations to be commented upon concerns specific measurement challenges for the construct of autonomy orientation, perceived competence and performance. The general causality orientation scale (GCOS), consisting of 12 hypothetical scenarios

measures autonomy orientation, controlled orientation and impersonal orientation. As this study used a translated version of the GCOS, additional problems occurred, resulting in deletion of four out of the twelve items. In addition, the translation of items in the perceived competence scale caused trouble in one of the items (Competence 1) that reduced the reliability of the scale (see Table 7). The performance scale (see Chapter 7.5) contains both effort (items 1,3, 4 and 5) and performance (items 2 and 6). The scale assessed in this study was reported in Kuvaas (2006a; 2006b) where factor analysis suggested that performance and effort/engagement underlie the same construct. Although the exploratory factor analysis in this study suggested two factors (see Appendix D), the scale was maintained as reported in previous studies. Although the factor analysis yielded sufficient results (see Table 10) and the scale showed acceptable reliability estimates (.74), it is not unreasonable that this might influence findings related to performance to some extent.

Fourth, it is a limitation that data in this study were obtained only from employees within the health sector in Norway. Although both profit and nonprofit sector were represented in the study, relationships may differ in other organizational fields as well as in other countries. Most organizational SDT studies have been conducted in the USA. One comparative SDT study of employees in the USA and Bulgaria in which different national cultures were represented, supported the self-determination model (Deci et al., 2001). Janssen et al. (2001) found support for related associations among bank employees and teachers, and the study by Janssen et al. (1999) supported similar relationships among nurses in the Netherlands. The relationships in the mentioned studies relate to this study of health workers as well as another study conducted among employees in Norwegian banks (Kuvaas, 2005). Evidence therefore supports the notion that the results may have implications in other Norwegian industries and in other countries. However, caution must be shown when it comes to generalizing the results in this study to other contexts.

Despite the limitations outlined in current research, strengths of current research design are present in this study. A few points are commented upon in the following. One is the relatively controlled design due to selection of one profit and one nonprofit hospital with similar activities but different levels of external (monetary) motivators. In this way, variation over variables at focus was attained. At the same time, the sample is as homogenous as possible for non-relevant factors. Hence, theory testing where internal validity is of primary concern was possible. Another strength regarding the design is the combination of qualitative and

quantitative approach of this study ensuring the relevancy of chosen variables as well as revealing possible new factors of importance.

9.4.2 Future research

Suggestions for future research are based on the limitations of this study. The four main categories of limitations that have been presented (Section 9.4.1) are the basis for suggestions of future research. Regarding the research design and the first main limitation of concern, longitudinal organizational studies addressing similar relations as in this study are needed in order to satisfy the direction criterion (Bollen, 1989). Hence, longitudinal studies will reduce the limitations of weak causal inferences. Further, quasi-experimental organizational studies would to some extent meet the isolation criterion as quasi-experiments to a large degree allow control of some of the variables. Quasi-experimental studies seem more realistic than the classical experiment in organizational settings. If critical variables can be controlled, for instance job autonomy, the same type of *ex ante* manipulation and *ex post* comparison as the classical experiment may be achieved. Then, intrinsic motivation followed by performance could be studied *ex post*. In this case, inferences of causality may be drawn to a greater extent than the current study.

Regarding the second main category of limitations, progress in the domain of common method variance could be achieved by paying attention to both objective and subjective measures. Because one of the major causes of common method variance is obtained by measures of the independent and dependent variables that are provided by the same person, one way of controlling for this is to collect measures of the variables from different sources (Podsakoff et al., 2003). For instance, in fields where objective measures for performance are available, this should be applied. Otherwise, performance data by supervisors as well as self-rated performance will improve the reliability of the variable.

The third category of limitations was related to construct challenges. An important comment to be made regarding the measurement scale of causality orientations is the need for the establishment of new autonomy orientation scales. As controlled orientation and impersonal orientation is less frequent than autonomy orientation (e.g., present study, Gagné, 2003; Gagné & Deci, 2005; Williams et al., 1996), scales that simply measure autonomy orientation are needed. A Norwegian validated autonomy orientation scale now exists (Martinsen, 2004), that is used in Kuvaas (2007a). Although the reliability coefficient was .70, further

refinements of autonomy orientation scales are due to the factor loadings needed. Furthermore, the performance scale needs further refinements in order to clearly seek to distinguish between the construct of effort and performance. In addition, the relevance of using the variable intrinsic motivation as it is defined in this study should be discussed. Strictly speaking, although intrinsic motivation is an important type of motivation, most activities that people do at work are probably not purely intrinsically motivated, as pointed out by Latham (2007, p.144). Future organizational SDT research should consider using motivation scales of autonomous motivation instead of intrinsic motivation and including the interplay between autonomous and controlled motivation. This would imply the need to establish validated scales on work motivation within the organizational field.

Fourth, since caution must be shown when it comes to generalizing the results in this study to other contexts, empirical research that examines the relationships among the same variables as this study is necessary in other types of nonprofit organizations as well as other organizational fields than the health sector. Although both profit and nonprofit sectors were represented in the study, relationships may differ in other types of nonprofit organizations and in other organizational fields. Within the large heterogeneous group of nonprofit organizations, the present research has investigated a nonprofit health organization that is based on religious characteristics. An interesting issue is whether studies in other categories of nonprofit organizations in other organizational fields (i.e., political parties) would yield the same results. For instance, whether the link between relatedness and intrinsic motivation would be fully mediated by perceived competence in other fields, such as academia is a question of empirical character. Another argument for conducting similar research in other organizational fields is outlined in the following. Jacobsen (2001) argues that people who choose to do a professional education, such as nurses or teachers have similar values in advance that are different from people that have selected a non-professional education such as administration and economics. As this research is a study of employees within the health sector that may have similar values and may be motivated by similar factors, the need for investigations of profit and nonprofit organizations in other fields is of importance. Therefore, research in profit and nonprofit organizations from other fields in Norway (than the banking industry and the health sector) is necessary.

In addition to possible variation across organizational fields, the findings in this study may vary across countries. One previous cross-cultural organizational SDT study has been

conducted (Deci et al., 2001) which is consistent with the results of current study. The study by Deci and his colleagues was a first step to test the generalizability of SDT in a work setting. A comparison of American (individualistic) and Bulgarian (collectivistic) culture supported the universality statement of basic psychological needs (need for autonomy, relatedness and competence). However, previous organizational SDT studies, as shown in Table 3, were limited to a few countries. Conduction of similar studies in other countries must be done in order to approach the generalization issue.

Based on the four categories of limitations that were discussed (Section 9.4.1), four respective categories of suggestions for future research have been outlined above. Two additional aspects are commented upon in the following. One is the need for research that examines the impact of social factors on motivation (Morgeson & Campion, 2003; Parker & Wall, 2001). The current study focuses on relatedness at work as one important dimension of social factors. Considering the research in a wider perspective, an interesting and important issue for future research is to investigate other aspects of social factors that may influence intrinsic work motivation. In my view, one interesting dimension within the category of social factors, to which little attention has been drawn, is the role of humor at work.

Based on findings from this study, one of the main areas for further investigation concerns the trade-off versus the additive effect of intrinsic and extrinsic motivation on performance in organizations. The findings in this study reveal that no differences in intrinsic motivation were found among the employees in the two organizations and that both extrinsic motivation and performance were significantly higher in the profit organization. The question of whether extrinsic motivation yields additional performance arises. This is regarded as an important step to be investigated next in greater detail. Since a negative correlation between intrinsic and extrinsic motivation was shown, and differences in extrinsic but not intrinsic motivation were found, the question of whether economically based extrinsic motivation is independent or dependent upon intrinsic motivation needs further clarification in future research. SDT and expectancy-value theories generate different hypotheses in this respect (see section 5.2.2). In contrast to expectancy-value theories (e.g., Eccles & Wigfield, 2002), SDT posits that intrinsic and extrinsic motivation are dependent variables. A SDT study by Vansteenkiste and colleagues (Vansteenkiste et al., 2004b) on intrinsic and extrinsic goals among students supported this view. The study showed that double goal framing (intrinsic and extrinsic) resulted in a less optimal pattern of outcomes compared to intrinsic goal framing.

The SDT view seems to be challenged in this organizational study in the way that both extrinsic motivation and performance were significantly higher in the profit organization at the same time as no differences in intrinsic motivation were found among the employees in the two organizations. However, what complicates this picture is the non-significant correlation between extrinsic motivation and performance that was revealed in this study. Hence, more research is needed in this regard. Based on findings in from this research, I see specifically two questions to be put forward for further investigation.

One is the question of *pay level* and level of economically based extrinsic motivation. The present research has focused on intrinsic motivation, and is therefore a study beyond money. A positive relationship between intrinsic motivation and performance across organizations (profit and nonprofit) was shown. Practical implications in terms of maintaining and enhancing intrinsic motivation are outlined. However, the assumption of pay being an important motivator also needs further investigation. To what extent and to what levels does money motivate employees? The other is the issue of *domain-specificity*. Although SDT studies support the notion that intrinsic motivation results in better optimal patterns/performance than extrinsic and intrinsic motivation together within the domain of education (Vansteenkiste et al., 2004b), the question of whether this is valid within the work domain must be investigated in further detail. I regard the two issues mentioned to be relevant, especially for managers that traditionally and primarily tend to use economic incentives as tools for enhancing performance.

9.5 Concluding remarks

The dissertation has investigated antecedents and outcomes of intrinsic work motivation in one profit and one nonprofit organization that differ in external (monetary) motivators. In particular it has been shown that the antecedents job autonomy, relatedness at work and the individual difference of autonomy orientation account for independent variance in intrinsic motivation. The alternative hypothesis of autonomy orientation as a moderator variable was not supported. Perceived competence was found to be a mediator between the antecedents and intrinsic motivation. A positive association between intrinsic motivation and performance and a negative relationship between intrinsic motivation and turnover intention were shown. Invariance analyses show that differences between the profit and nonprofit organization were not found. Hence, regardless of differences in pay level and extrinsic motivation in the two organizations, intrinsic motivation was positively associated with performance. Therefore, factors influencing intrinsic motivation play an important role in both the profit and the nonprofit organization. The findings of this study must be viewed in light of its limitations. Granted these limitations, theoretical and practical implications are provided. Limitations in turn provide avenues for future research.

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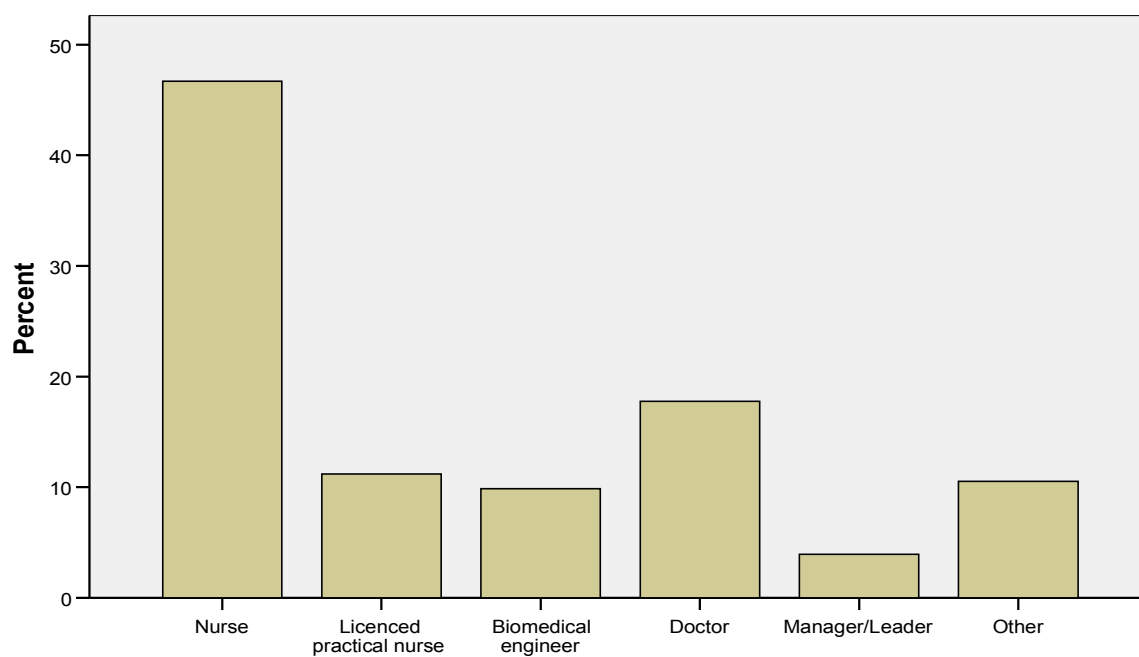
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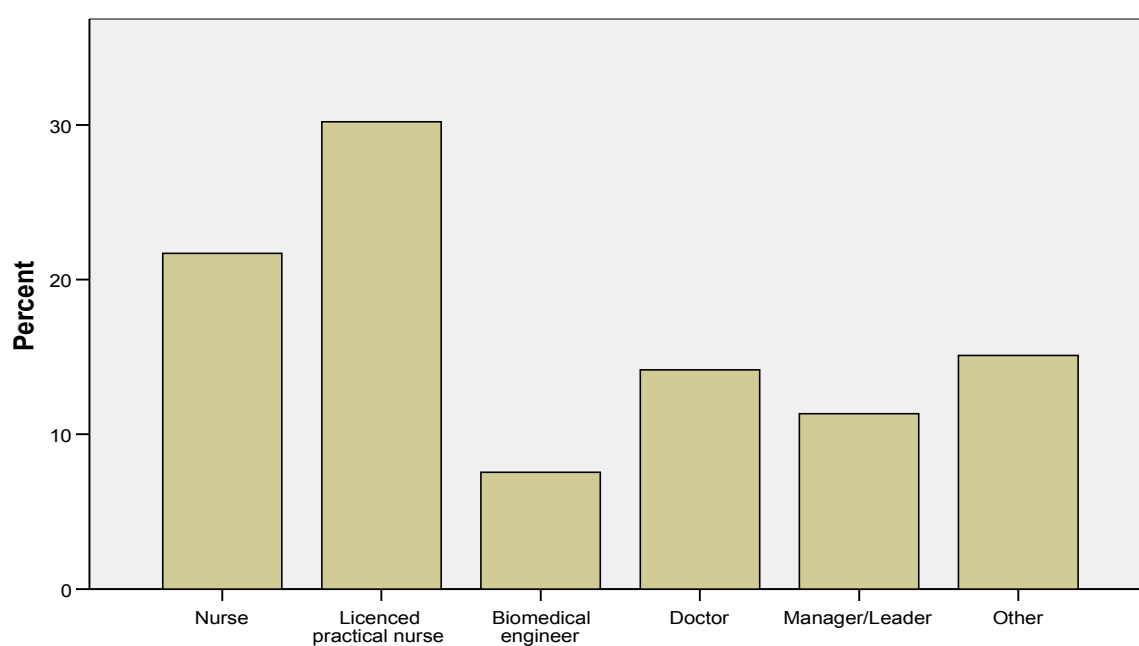
APPENDICES

Appendix A: Type of position and level of education

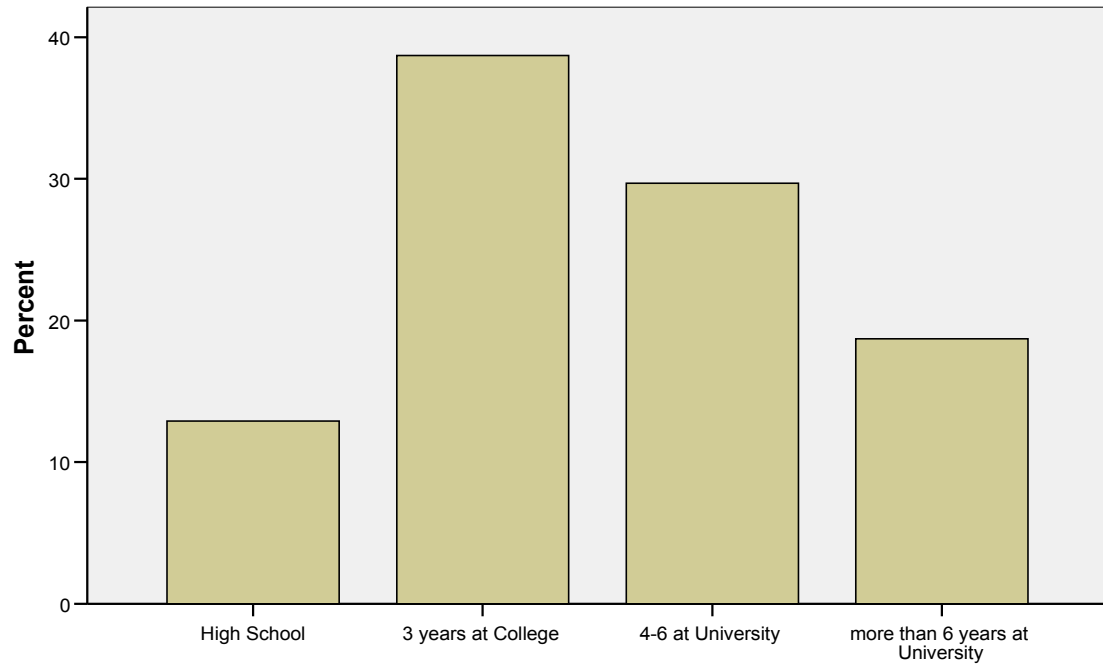
Nonprofit organization: Type of position



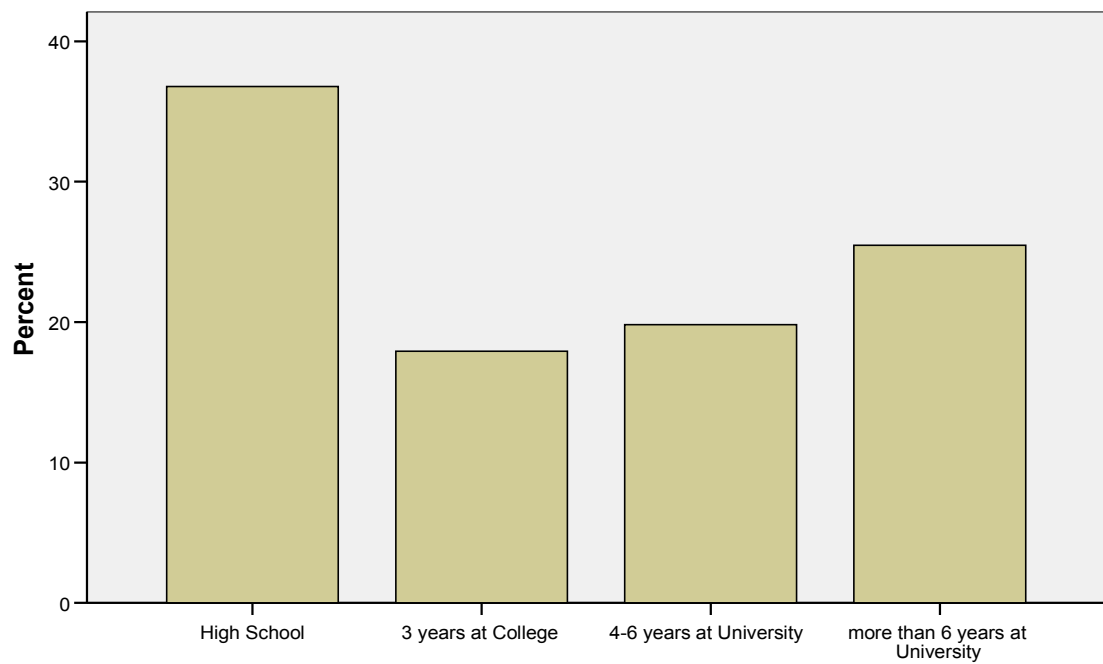
Profit organization: Type of position



Nonprofit organization: Highest level of education



Profit organization: Highest level of education



Appendix B: Measurement scales in English and Norwegian

ENGLISH

Job autonomy

- | | |
|---------|--|
| Jobaut1 | How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own work? |
| Jobaut2 | The job gives me considerable opportunity for independence and freedom in how I do the work. |
| Jobaut3 | The job gives me a chance to use my personal initiative and judgment in carrying out the work. |

Relatedness

- | | |
|----------|---|
| Related1 | I really like the people I work with. |
| Related2 | I get along with people at work. |
| Related3 | I pretty much keep to myself when I am at work (R) |
| Related4 | I consider the people I work with to be my friends. |
| Related5 | There are not many people at work that I am close to (R). |
| Related6 | The people at work do not seem to like me much (R). |
| Related7 | People at work are pretty friendly towards me. |

(R) – reversed item.

Competence

- | | |
|-------------|--|
| Competence1 | I am able to achieve my goals in this job. |
| Competence2 | I feel confident in my ability to learn this material. |
| Competence3 | I am capable of learning the material in this job. |
| Competence4 | I feel able to meet the challenge of performing well in this work. |

Intrinsic motivation

- | | |
|------------|--|
| Intrinsic1 | My job is meaningful. |
| Intrinsic2 | My job is very interesting. |
| Intrinsic3 | Sometimes I find my work so exciting that I forget what is going on around me. |
| Intrinsic4 | The tasks that I do at work are themselves representing a driving power in my job. |
| Intrinsic5 | The tasks that I do at work are enjoyable. |
| Intrinsic6 | My job is so interesting that it is a motivation in itself. |

Performance

- | | |
|--------------|--|
| Performance1 | I try to work as hard as possible. |
| Performance2 | I often perform better than what can be expected. |
| Performance3 | I often expend extra effort in carrying out my job. |
| Performance4 | I intentionally expend a great deal of effort in carrying out my job. |
| Performance5 | The quality of my work is top-notch. |
| Performance6 | I almost always perform better than what can be characterized as acceptable performance. |

Turnover

- | | |
|-----------|--|
| Turnover1 | I often think about quitting my present job. |
| Turnover2 | I will probably look for a new job within the next three years. |
| Turnover3 | I may quit my present job next year. |
| Turnover4 | I will probably look for a new job next year. |
| Turnover5 | I do not see much prospects for the future in this organization. |

Autonomy orientation – General Causality Orientation Scale (GCOS)

These items pertain to a series of hypothetical sketches. Each sketch describes an incident and lists three ways of responding to it. Please read each sketch, imagine yourself in that situation, and then consider each of the possible responses. Think of each response option in terms of how likely it is that you would respond that way. (We all respond in a variety of ways to situations, and probably most or all responses are at least slightly likely for you.) If it is very unlikely that you would respond the way described in a given response, you should circle answer 1 or 2. If it is moderately likely, you would select a number in the mid range, and if it is very likely that you would respond as described, you would circle answer 6 or 7.

1. You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

a) What if I can't live up to the new responsibility?

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Will I make more at this position?

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) I wonder if the new work will be interesting.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

2. You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

a) Talk it over with your daughter to understand further what the problem is.

b) Scold her and hope she does better.

c) Make sure she does the assignments, because she should be working harder.

3. You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:

- a) It's not what you know, but who you know.
- b) I'm probably not good enough for the job.
- c) Somehow they didn't see my qualifications as matching their needs.

4. You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

- a) Telling the three workers the situation and having them work with you on the schedule.
- b) Simply assigning times that each can break to avoid any problems.
- c) Find out from someone in authority what to do or do what was done in the past.

5. A close (same-sex) friend of yours has been moody lately, and a couple of times has become very angry with you over "nothing." You might:

- a) Share your observations with him/her and try to find out what is going on for him/her.
- b) Ignore it because there's not much you can do about it anyway.
- c) Tell him/her that you're willing to spend time together if and only if he/she makes more effort to control him/herself.

6. You have just received the results of a test you took, and you discovered that you did very poorly. Your initial reaction is likely to be:

- a) "I can't do anything right," and feel sad.
- b) "I wonder how it is I did so poorly," and feel disappointed.
- c) "That stupid test doesn't show anything," and feel angry.

7. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:

- a) You'll try to fit in with whatever is happening in order to have a good time and not look bad.
- b) You'll find some people with whom you can relate.
- c) You'll probably feel somewhat isolated and unnoticed.

8. You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:

- a) Take charge: that is, you would make most of the major decisions yourself.
- b) Follow precedent: you're not really up to the task so you'd do it the way it's been done before.
- c) Seek participation: get inputs from others who want to make them before you make the final plans.

9. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:

- a) You didn't really expect the job; you frequently get passed over.
- b) The other person probably "did the right things" politically to get the job.
- c) You would probably take a look at factors in your own performance that led you to be passed over.

10. You are embarking on a new career. The most important consideration is likely to be:

- a) Whether you can do the work without getting in over your head.
- b) How interested you are in that kind of work.
- c) Whether there are good possibilities for advancement.

11. A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less actively interested in her work. Your reaction is likely to be:

- a) Tell her that her work is below what is expected and that she should start working harder.
- b) Ask her about the problem and let her know you are available to help work it out.
- c) It's hard to know what to do to get her straightened out.

12. Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:

- a) Feel interested in the new challenge and a little nervous at the same time.
- b) Feel excited about the higher status and salary that is involved.
- c) Feel stressed and anxious about the upcoming changes.

Individual Styles Response Form GCOS

- | | | |
|--|--|--|
| 1. a Impersonal
b Controlled
c Autonomy | 2. a Autonomy
b Impersonal
c Controlled | 3. a Controlled
b Impersonal
c Autonomy |
| 4. a Autonomy
b Controlled
c Impersonal | 5. a Autonomy
b Impersonal
c Controlled | 6. a Impersonal
b Autonomy
c Controlled |
| 7. a Controlled
b Autonomy
c Impersonal | 8. a Controlled
b Impersonal
c Autonomy | 9. a Impersonal
b Controlled
c Autonomy |
| 10. a Impersonal
b Autonomy
c Controlled | 11. a Controlled
b Autonomy
c Impersonal | 12. a Autonomy
b Controlled
c Impersonal |

NORWEGIAN

Job autonomy

- | | |
|---------|---|
| Jobaut1 | Hvor mye autonomi er det i jobben din, dvs. i hvilken grad kan du selv bestemme hvordan du vil utføre arbeidsoppgavene? |
| Jobaut2 | I min jobb har jeg stor selvstendighet og frihet til å bestemme hvordan jeg skal løse mine arbeidsoppgaver. |
| Jobaut3 | Jobben gir meg muligheter til å vise initiativ og bruke egen dømmekraft. |

Relatedness

- | | |
|----------|---|
| Related1 | Jeg liker mine arbeidskollegaer svært godt. |
| Related2 | Jeg kommer godt overens med folk på jobben. |
| Related3 | Jeg holder meg stort sett for meg selv på jobben (R). |
| Related4 | Jeg ser på mine arbeidskollegaer som venner. |
| Related5 | Det er ikke mange folk på jobben som jeg har et nært forhold til (R). |
| Related6 | Det virker som mine kollegaer ikke synes så mye om meg (R). |
| Related7 | Folk på jobben er stort sett hyggelige mot meg. |

(R) – reversed item.

Competence

- | | |
|-------------|---|
| Competence1 | Jeg vil de nå de målsettinger jeg har satt meg i denne jobben. |
| Competence2 | Jeg har tro på at jeg klarer å lære det som skal til for å utføre mine arbeidsoppgaver. |
| Competence3 | Jeg er i stand til å sette meg inn i arbeidsoppgavene i denne jobben. |
| Competence4 | Jeg kjenner meg i stand til å mestre utfordringene i denne jobben og gjøre en god jobb. |

Intrinsic motivation

Intrinsic1	Jeg føler at den jobben jeg gjør er meningsfull.
Intrinsic2	Jobben min er veldig spennende.
Intrinsic3	Av og til blir jeg så inspirert av jobben min at jeg nesten glemmer ting rundt meg.
Intrinsic4	Mine arbeidsoppgaver er i seg selv en viktig drivkraft i jobben min.
Intrinsic5	Det er gøy å jobbe med de arbeidsoppgavene jeg har.
Intrinsic6	Jobben min er så interessant at den i seg selv er sterkt motiverende.

Performance

Performance1	Jeg forsøker å jobbe så hardt som overhodet mulig
Performance2	Jeg presterer bedre enn hva som kan forventes
Performance3	Jeg legger ofte inn ekstra innsats i jobben min
Performance4	Jeg er svært opptatt av å gjøre en god innsats i jobben min
Performance5	Arbeidet mitt er av ypperste kvalitet
Performance6	Jeg yter nesten bestandig mer enn hva som kan betegnes som et akseptabelt innsatsnivå

Turnover

Turnover1	Jeg tenker ofte på å slutte i min nåværende jobb
Turnover2	Jeg vil trolig lete aktivt etter en ny jobb i løpet av de nærmeste 3 årene
Turnover3	Jeg kan komme til å slutte i min nåværende jobb i løpet av året
Turnover4	Jeg vil sannsynligvis lete aktivt etter en ny jobb det neste året
Turnover5	Jeg oppfatter mine fremtidsutsikter i denne organisasjonen som dårlige

Autonomy orientation – General Causality Orientation Scale (GCOS)

Følgende oppgaver er knyttet til noen hypotetiske situasjonsbeskrivelser. For hver situasjonsbeskrivelse er det satt opp tre alternative måter å reagere på. Prøv å forestille deg at du opplever situasjonen slik den er beskrevet. Les gjennom hvert alternativ og vurder hvor sannsynlig det er at du selv ville reagere slik det er beskrevet, på en skala fra 1 (svært usannsynlig til 7 (svært sannsynlig).

1. Du har blitt tilbudt en ny stilling i den samme bedriften som du har jobbet en god stund. Det første som slår deg er følgende:
- a) Tenk om jeg ikke takler ansvaret i den nye stillingen?
- | | | | | | | |
|-------------------|---|---|---|------------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Svært usannsynlig | | | | Svært sannsynlig | | |
- b) Kommer jeg til å tjene mer i den nye stillingen?
- | | | | | | | |
|-------------------|---|---|---|------------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Svært usannsynlig | | | | Svært sannsynlig | | |
- c) Jeg lurer på om det nye arbeidet vil bli interessant
- | | | | | | | |
|-------------------|---|---|---|------------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Svært usannsynlig | | | | Svært sannsynlig | | |

2. Du har en datter som går på skole. I foreldresamtale med hennes lærer får du beskjed om at din datter henger etter og virker lite interessert i skolearbeidet. Du vil antageligvis:
- a) Ta dette opp med din datter for å prøve å forstå hvor problemet kan ligge.
 - b) Gi henne en liten overhaling og håpe at hun tar seg sammen
 - c) Følge henne opp og påse at hun gjør skolearbeidet, fordi hun må øke innsatsen.
3. Du var på jobbintervju for noen uker siden. Du mottar et brev i posten der det fremgår at stillingen nå er besatt. Du vil sannsynligvis tenke:
- a) Det er ikke hva du kan som teller, men hvem du kjenner.
 - b) Jeg var vel ikke god nok for den jobben.
 - c) De synes vel ikke at mine kvalifikasjoner passet til stillingen.
4. Du er driftssjef og har fått ansvaret med å sette opp en plan for kaffepauser for tre medarbeidere som ikke alle kan ta pause samtidig. Du vil håndtere situasjonen ved å:
- a) Informere de tre om situasjonen og be de hjelpe deg med å finne en løsning.
 - b) Sette opp tidspunktene for kaffepausene selv, for å unngå konflikter.
 - c) Spørre en overordnet hvordan dette bør håndteres eller hvordan dette har blitt håndtert tidligere.
5. En nær venn (samme kjønn som deg selv) har vært litt humørsyk i det siste, og ved et par anledninger har han/hun blitt rasende på deg, tilsynelatende på grunn av "småting". Du vil trolig:
- a) Snakke ut med han/henne om dette og prøvde å finne ut hva som plager han/henne.
 - b) Overse det hele, for det ikke er stort du kan gjøre med det.
 - c) Gjøre det klart for han/hun at er dersom dere skal fortsette å ha kontakt må han/hun prøve å ta seg sammen og beherske seg.
6. Du har akkurat fått vite at du gjorde det dårlig på en prøve du tok nylig. Din umiddelbare reaksjon vil trolig være at du tenker:
- a) "Jeg får aldri til noe", og blir lei deg.
 - b) "Jeg lurer på hvorfor det gikk så dårlig", og blir skuffet.
 - c) "Sanne prøver sier egentlig ingenting", og blir sint.
7. Du har blitt invitert til et stort selskap der du vet at du vet at du ikke kommer til kjenne mange. Når du forestiller deg hvordan det kommer til å være i selskapet tenker du:
- a) Du vil forsøke å tilpasse deg til omgivelsene slik at det blir en hyggelig opplevelse og du ikke stikker deg ut.
 - b) Du vil sikkert finne noen du kan kommunisere med.
 - c) Du kommer trolig til å føle deg noe ensom og utilpass.

8. Du har fått i oppdrag å arrangere en liten fest for din avdeling. Du vil nærme deg denne oppgaven ved å:
- a) Ta kontrollen – det vil si ta alle de vesentlige beslutningene selv.
 - b) Følge tradisjon – du føler ikke at du har så mye å bidra med selv, så du vil gjøre det slik det alltid har blitt gjort tidligere.
 - c) Samarbeide – spørre andre om de har innspill før du tar beslutninger.
9. Du opplevde nylig at en stilling som ville betydd forfremmelse for deg åpnet seg. Det var imidlertid en av dine kollegaer som ble tilbudt denne stillingen i stedet for deg. Når du vurderer situasjonen vil du trolig tenke at:
- a) Du hadde egentlig ikke forventet å få stillingen da du ofte har blitt forbigått tidligere.
 - b) Den som ble tilbudt stillingen visste hvordan han/hun skulle sno seg for å få en slik stilling.
 - c) Du vil tenke gjennom hvordan du fungerer på arbeidsplassen og hva som gjorde at du ble forbigått.
10. Du vil slå inn på en ny karriere-vei. Det viktigste å tenke på når du vurderer ny karriere-vei er:
- a) Om du greier å utføre arbeidsoppgavene uten at du tar deg vann over hodet.
 - b) Om du virkelig synes denne typen arbeid er interessant.
 - c) Om det er gode muligheter for personlig og karrieremessig utvikling.
11. Du har en kvinnelig medarbeider som stort sett gjør en god jobb. Men de siste to ukene har hun ikke utført arbeidsoppgavene i henhold til forventninger og hun synes å være litt fraværende i forhold til jobben. Du vil sannsynligvis:
- a) Fortelle henne at hun ikke presterer godt nok og at hun må jobbe hardere.
 - b) Spør om henne om det er noe som plager henne og si i fra at hun gjerne kan snakke om dette med deg.
 - c) Det er vanskelig å vite hva du skal gjøre for å få henne på rett kjøl.
12. Din arbeidsgiver har gitt deg opprykk til en ny stilling, og stillingen er knyttet til et arbeidssted som ligger langt fra der du bor nå, og dette betyr at du må flytte. Du vil trolig:
- a) Se med forventning fram mot den nye utfordringen og samtidig være litt spent.
 - b) Føle stor begeistring fordi stillingen innebærer økt status og høyere lønn.
 - c) Føle deg litt stresset og usikker i forhold til alle endringene som vil komme.

Appendix C: Descriptive statistics of the sample at item-level.

	N	Mean	St.dev.	Skewness	Kurtosis
Job factor					
Jobaut1	258	4.53	1.78	-.36	-.91
Jobaut2	261	4.90	1.63	-.65	-.26
Jobaut3	260	5.63	1.40	-1.23	1.19
Social factor					
Related1	261	6.09	.998	-1.30	1.94
Related2	260	6.27	.937	-2.24	8.27
Related3	260	6.15	1.23	-1.90	3.35
Related4	260	5.08	1.49	-.41	-.63
Related5	261	4.45	1.72	-.09	-.97
Related6	261	6.08	1.22	-1.99	4.27
Related7	261	6.33	1.06	-2.97	11.10
Individual factor					
Autonomy1	232	5.95	1.20	-1.56	2.99
Autonomy2	232	6.72	.52	-1.85	3.65
Autonomy3	232	5.52	1.40	-1.03	1.03
Autonomy4	232	6.18	1.02	-1.78	4.49
Autonomy5	232	5.72	1.30	-1.19	1.27
Autonomy6	232	5.52	1.37	-1.33	1.92
Autonomy7	231	5.79	1.07	-.79	.42
Autonomy8	232	6.17	1.03	-1.65	3.54
Autonomy9	231	5.63	1.25	-.93	.92
Autonomy10	232	6.11	1.04	-1.61	4.16
Autonomy11	231	5.61	1.33	-.94	.60
Autonomy12	232	3.45	2.06	.20	-1.32
Perceived competence					
Competence1	259	5.64	1.18	-1.06	1.18
Competence2	260	6.42	.87	-2.65	10.69
Competence3	261	6.49	.75	-2.35	10.80
Competence4	259	6.20	.88	-1.40	3.25

	N	Mean	St.dev.	Skewness	Kurtosis
Intrinsic motivation					
Intrinsic1	260	6.13	.96	-1.30	2.25
Intrinsic2	259	5.16	1.43	-.71	.10
Intrinsic3	258	4.00	1.73	-.13	-.82
Intrinsic4	256	5.14	1.36	-.61	.07
Intrinsic5	259	5.39	1.25	-.58	-.12
Intrinsic6	258	5.03	1.39	-.56	.10
Performance					
Performance1	258	5.68	1.24	-1.09	1.45
Performance2	255	4.39	1.48	-.53	.08
Performance3	259	5.63	1.24	-1.07	1.47
Performance4	259	6.29	.86	-1.66	5.18
Performance5	258	5.34	1.05	-.47	.70
Performance6	259	4.53	1.44	-.45	-.09
Turnover intention					
Turnover1	258	2.75	1.83	.71	-.69
Turnover2	259	3.16	2.15	.58	-1.05
Turnover3	260	2.25	1.84	1.41	.81
Turnover4	259	2.49	1.97	1.13	-.04
Turnover5	260	2.82	1.93	.81	-.51

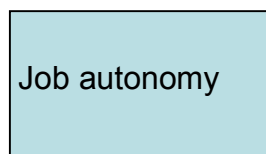
Appendix D: Factor analysis performance

Exploratory factor analysis of the performance variable.

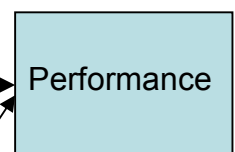
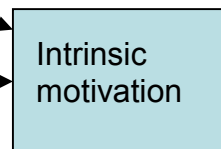
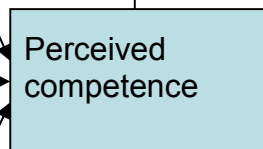
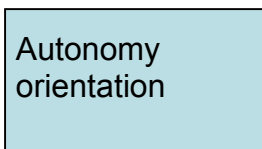
	Component 1	Component 2
	1	2
Performance1	.65	-.38
Performance2	.62	.62
Performance3	.79	-.24
Performance4	.70	-.48
Performance5	.64	.03
Performance6	.59	.62
Initial eigenvalues	2.67	1.2
% of variance extracted	44.52	20.11
Cronbach's alpha	.74	.71

Appendix E: Invariance analyses in SEM

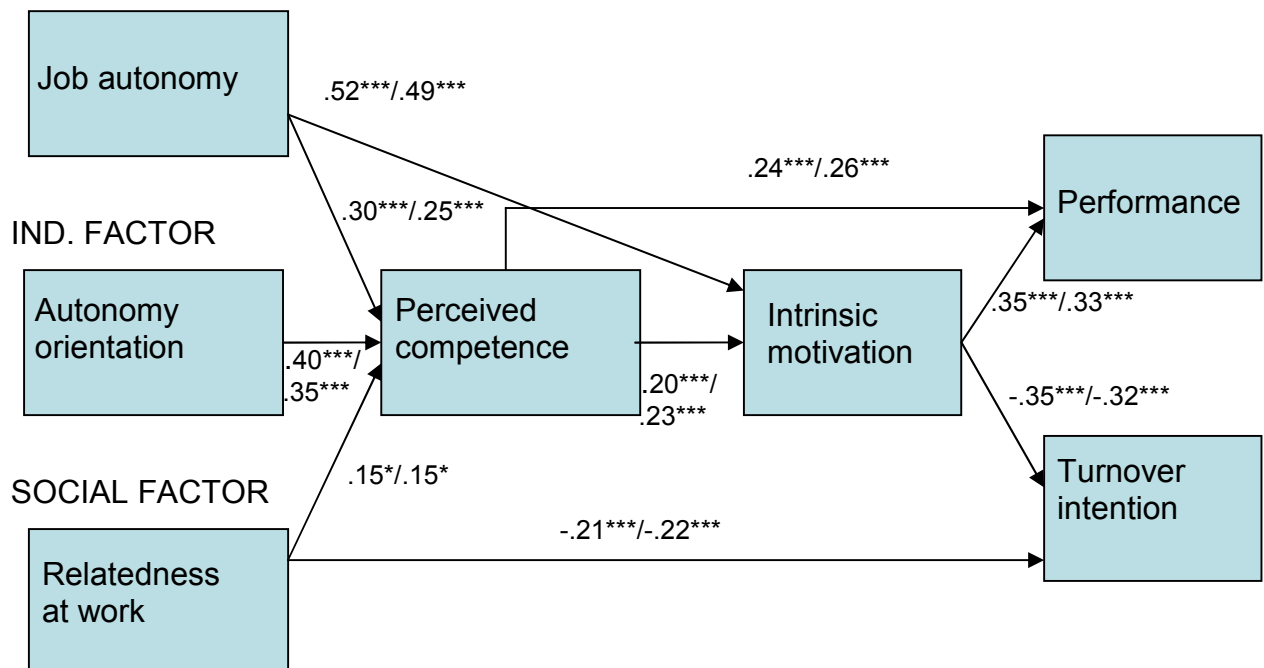
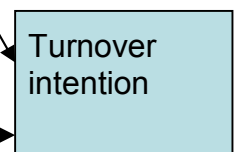
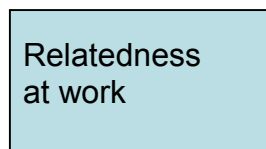
JOB FACTOR



IND. FACTOR



SOCIAL FACTOR



Notes: Standardized parameter estimates for the structural model with observed variables are shown (using AMOS 6.0). All paths in the structural model were judged equivalent across organizations. Parameter estimates in the two organizations differ slightly. Path coefficients for the Profit organization are shown before the slash and parameter estimates for the Nonprofit organization are shown after the slash.

Chi-square (df = 27) = 34.40, $p > .16$

NNFI = .97, CFI=.98, IFI= .98, RMSEA= .035